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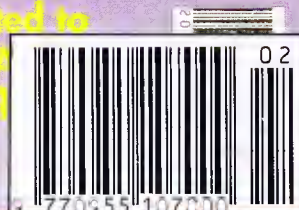
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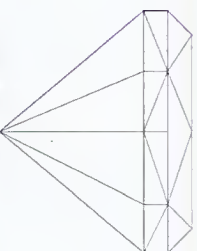
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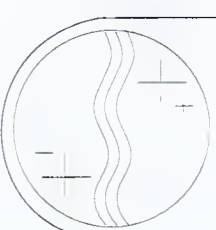


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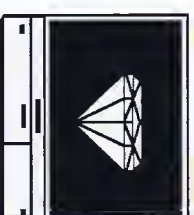
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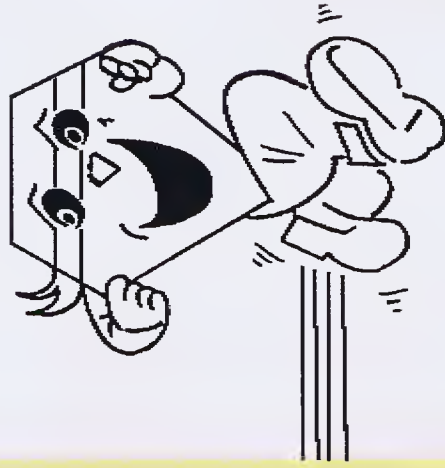
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AMIGA USER

INTERNATIONAL

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THE AMIGA DIMENSION

Dear AUI Reader,

In this issue, we include W/P, programming, paint and titling programs for children and adults, hand printing, mice, a music supplement and a report of data passing at 24 gigabytes a second. We also have games, adventure and arcade, and, in the classic publishing phrase, "much much more".

With this variety, it is not surprising that occasionally people wonder what kind of magazine **AUI** is. We get accused of including too many shoot 'em ups for a serious publication and of being too serious and not having enough games!

What few will deny, however, is that the varied, and sometimes rather odd, mixture we provide has given **AUI** a unique personality - which may not, indeed, be to everyone's taste.

In computer publishing, there is, it seems to me, too little individual personality in and difference between magazines. Too many publications resemble each other closely - in fact are almost clones. Often, they are little more than games reviews piled on games reviews only separated by advertisements. That cloning is a pity because a computer such as the Amiga offers a user far more than than a single relatively passive role - as should a magazine, at least one with an intelligent readership.

At **AUI**, in the mixture, we attempt to maintain a balance between many contrasts: between reviews and original material, between entertainment and instruction, between specific Amiga concerns and the wider world, between constant factors and the unexpected, between the expert and the novice, the power user and the Amiga owner with small means (but possibly big ideas), between the technofreak and the games player, the experienced programmer and the aspiring Basic learner and "many many more".

Aspiration often has a lot to do with the reason people buy computers and how a user approaches it. He or - unfortunately less often, she - wants to move forward into

greater, more practised and more enjoyable domination of the technology. And, we have found, frequently likes reading about things that he/she may never even get to experience. **AUI** tries to satisfy that aspirational desire and also that natural curiosity.

AUI's News section also arouses comment. Why does does an Amiga specific magazine publish material not specific to the Amiga? No, it isn't just MSDOS which is appropriate now. We consider that **AUI** readers, whatever their many differences, tend to have intelligent enquiring minds. You are not, we believe, zombies interested only in the Amiga or even in only one section of it but want to understand where the relevant technology is heading and what it means to you and our world.

The Amiga was - and still is - a leading edge machine. Our view, at **AUI**, is that people who use it are able and very willing to take an interest in and even make an effort towards improving their comprehension not only of the Amiga itself but of its whole environment. Such an understanding may help you to make rational choices in a complex and often seemingly irrational world. Our News section, we hope, reflects this.

Even from the early days as the first Amiga magazine on this side of the Atlantic, we have believed we should respect the intelligence of our readers. Now that there are so many more Amigas around, some being treated as not much more than games consoles, we are sometimes advised to change the format and follow the notorious publishing maxim "You never go broke underestimating the intelligence of the reading public!" We don't intend to go that way. And in our third year as a monthly publication, as the number of **AUI** readers goes on increasing, it seems that the wide range of interests we cover must be pleasing a growing proportion of you who make up the Amiga Dimension. If what we provide isn't always to your particular taste, I would be glad to know why. As they also say in publishing, "The buck stops at the Editor".

Antony Jacobson
Managing Editor

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VARIABLE-HEIGHT WORKSTATIONS



SIS and Esselte adjustable-height workstations, say Action Computer Supplies, are designed to offer maximum comfort to operators of all shapes and sizes. (You don't see many square Amiga users these days, do you?) The SIS adjustable workstation, has keyboard, CPU and printer shelves all independently adjustable to convenient working heights, and is available in 600-mm and 700-mm widths for 80 and 132-column printers respectively.

The sliding keyboard and printer shelves are fitted with locking screws for stability when in use. Price of the SIS 600-mm station is £130.00, and the 700-mm station £159.00; side box and shelf extensions are available with the workstation at £57.50 and £37.80 respectively.

Contact Action Computer Supplies, Alperton House, Briggewater Road, Wembley, Middlesex, HA0 1EH. Tel: 0800 333 333.

ARE WE GETTING ENOUGH FIBRE?

GTE Laboratories has said it is continuing to build fibre's ability to transport more and more information for voice, data and image through laser research.

Engineers at GTE Labs, in Waltham, Massachusetts, have told us they have invented a semiconductor laser that operates at 24 gigabits per second, outstripping the speed of the 22-gbps laser they also developed. Wow! You always thought a mere 22 gigabytes much too slow, didn't you?

They said they reduced the 'active area' at the core of the fibre and insulated it from leakage, thus increasing the intensity of the light in the fibre and the rate at which it could be released. 'With the help of these lasers, educational programs, medical images, symphonics, financial analyses and more can be delivered simultaneously over a single fibre' said Robert Lauer, manager of optoelectronic devices and materials at GTE Labs.

Digitised Modemised MIRROR

The Mirror Group Newspapers has bought 20 V32 portable modems from the Codex Corp. a unit of Motorola who of course supply the chips that power the Amiga, for its photographers to use when covering stories outside the United Kingdom.

The modems were tested last summer when photographers transmitted photos of England's World Cup football matches in Italy to the publishing group's offices in London.

Each photographer used a portable image digitiser, supplied by the Swedish camera company Hasselblad, to translate their work into digital format for transmission via satellite link or telephone line. Once digitized, the photos were then sent via the modems, which operate at up to 9,600 bits per second on both asynchronous and synchronous telephone lines. More and quicker photos of Gazza. Now isn't that something to look forward to?!

ANTI-JUNK MAIL

ICD, which claims to be the largest supplier of data to the data marketing industry (but is no relation to the Amiga hardware manufacturer) has launched a new database which aims to counteract the direct marketing industry's 'junk mail' image.

Called 'The Suppression Club', the database lists people who do not want to be mailed, have moved home or are deceased. Direct mail companies can run the list of people they intend to mail against The Suppression File so that they can concentrate on targeting potential clients more effectively.

The Suppression Club will supplement the 350,000 names contained in the Mailing Preference Service with more than 800,000 names to form the pool file. Membership of the club will cost a one-off fee of £5,000 to cover start-up and processing costs. Well that's a relief, isn't it? Now, if you are dead, you won't be troubled by the mailman again - and the junk mail companies will save the stamp. The Suppression Club... that's a great title. What about suppressing junk mail altogether?

Smallest Amiga Drive?



This little 20 Meg hard drive from Germany is claimed at 100 mm x 70 mm x 15 mm to be the tiniest you can buy for the Amiga. The Arriba HD costs around £325.

Contact: Gigatron, Thuler Strasse 3, Postfach 1130, D4594 Sarrel. Tel: 04474 1010.

LASER WITH IMAGING CARTRIDGES



Epson's new EPL7100 laser, an enhanced version of their popular CQ5000, offers, Epson claims, higher processing speed, increased flexibility with scaleable fonts, and a new Minolta engine producing higher quality output. A major feature is the Imaging Cartridge, a single unit which replaces drum, toner cartridge and collector.

Available from Action well below its MRP of £1199.00 and including Action's two-year extended warranty, the EPL7100 is fully compatible with the HP Laserjet II, and prints at 6 ppm with 300 x 300 dpi resolution.

Features include 512-KB RAM, which can be expanded to 6 MB; thirteen outline fonts

and eleven GQ-mode, bitmapped scaleable fonts; two IC card slots; and RS232/RS422 serial and Centronics parallel interfaces.

Contact: Action Computer Supplies, Alperton House, Bridgewater Road, Wembley, Middlesex HA0 1EH Tel: 0800 333 333

70 SQUARE FEET PAGES!

In the January issue of *AUI*, we reported that New Horizons were releasing Graphic Designer. We have now had the chance to look at an early version. Peter Lee opines that Graphics Designer is a high performance structured drawing program and judging by the Beta version we have seen, it promises to add a powerful arm to the Amiga's CAD/graphics capabilities.

Differing from bitmapped graphics with the images stored as points, the program can handle actual page sizes of 70 square feet and features a wealth of subtle and sophisticated opportunities for the designer.

A toolbox provides options for creating the images, and alongside rectangle, line, circle and polygon is a neat freehand tool.

Solid colours or user-definable patterns are available, and text can be input on screen.

The benefits of structured drawing include the ability to store much more information in memory, and also a fast way of manipulating data in the form of magnification or rotation.

AUI hopes to bring you a full test drive once the program is complete. The final version is expected shortly (but you know what programmers are, so don't hold your breath!)

ATLANTA'S 1996 OLYMPICS AIDED BY AMIGA

The Blue Ribbon SoundWorks, formally Blue Ribbon Bakery, Inc., participated in the City of Atlanta's winning bid for the 1996 Summer Olympic games by designing the software used to control its award winning interactive multi-media exhibit on an Amiga. This exhibit debuted in Tokyo, where the City of Atlanta was chosen for the 1996 summer games. The interactive multi-media exhibit utilized an Amiga to co-ordinate videodisks, live MIDI files, animation, narration and a touch-screen display. This technology, pioneered by The Blue Ribbon SoundWorks in conjunction with the Georgia Institute of Technology, is now being used by major corporations.

The Blue Ribbon SoundWorks used its Bars and Pipes MIDI package to compose the entire soundtrack for the presentation. Also used was the Bars and Pipes MIDI Player and Recorder, which is available from the Blue Ribbon SoundWorks in its Multi-Media Kit (\$59.95).

Contact: The Blue Ribbon SoundWorks, 1293 Briardale NE, Atlanta, Georgia 30306. (404) 377-1514

THE TINIEST COPIER?



Sanyo have introduced what they claim is the world's smallest plain paper copier. The SFT-50 desktop copier weighs just 11kg and measures 367mm by 400mm by 123mm, yet it includes three colour monochrome copying, a multifeed system and edge to edge copying up to A4 size.

It can be stored in an upright position when not in use and

the input and output trays fold into the case. The unit can be set to make up to 20 copies while its paper tray will hold - and automatically feed - up to 50 sheets. With all controls mounted on the front of the machine, the SFT-50 offers a 30 second warm-up time and an initial copy time of 16 seconds - after which it will turn them out at six per minute.

TRAVELLING FAX



The fax machine is now moving out of the office with the introduction of the NEC Carfax Cellular Line Interface. This not only allows a fax to be sent via the cellular network but also provides a connection means for portable computers.

NEC see field sales and service engineers, transportation and delivery staff making good use of mobile fax units in general administrative applications. 'The CLI makes the complete mobile office a reality,' says NEC Telecommunications' Malcolm Bartlett.

The CLI interface (no relation to the Amiga CLI, of course) is priced at £350 and can be fitted to existing installations at a charge of £80.

20 RADIATION-FREE DISPLAY PANEL

While expert opinion is very much divided, concern has been raised in several quarters regarding the potential health risks of electromagnetic emission from computer monitors. The Sygnos 68 LCD monitor from Sygnos Technologies is claimed to be virtually free from radiation emissions in addition to providing some ergonomic benefits.

Less than 6mm thick, the display supports full mono VGA graphics at 640 by 480 pixel resolution. Contrast is said to be very good while the unit displays 16 levels of grey and provides flicker-free scrolling and reduced screen glare.

The slim design of the screen

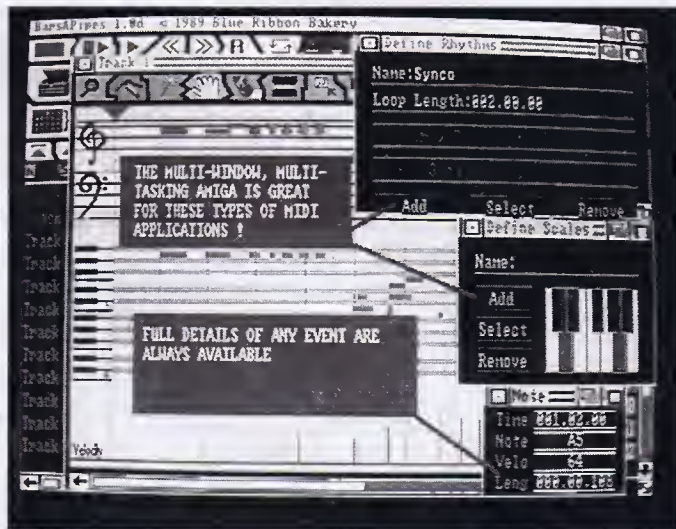
allows it to be positioned easily on any desk and its angle to the user can be adjusted. The very low power consumption display panel receives both power and data from the computer's expansion slot - providing a neat cabling solution.

BROTHER'S FAXES

Brother has announced a fax machine at a special introductory price of £399 plus VAT - the Fax-160. It is an update of Brother's first fax, and offers features such as a faster transmission time of 15 seconds, 16-digit LCD display, including a clock, and speed dialling for up to 40 numbers, 16 grey scales and a polling facility. There is a delayed send facility which allows users to make the most of off-peak telephone rates. **Contact: (061) 330 6531**

BARS AND PIPES PROFESSIONAL

Blue Ribbon SoundWorks has announced the release of Bars and Pipes Professional, an enhanced version of their Bars and Pipes MIDI music sequencing software for the Amiga. This new program is targeted at the professional musician, MIDI enthusiast, and educator, and incorporates many enhancements and features requested by power users of Bars and Pipes.



Bars and Pipes Professional features integrated music notation for both editing and sheet music printing. recorded notes are displayed in standard notation, and note editing can be performed on the notation display. This feature makes Bars and Pipes Professional, say Blue Ribbon, the first Amiga MIDI sequencer to feature an integrated notation function.

An event list editor has also been included in Bars and Pipes Professional, enabling direct text editing of all recorded MIDI data. The event list editing window is linked to the graphics editing window. Event list editing functions include insert, copy, cut, paste, delete, and editing with Bars and Pipes' unique Tools concept. Users can now choose to use either the piano roll, enhanced staff, event list or music notation as their editing medium.

Bars and Pipes Professional includes the new MixMaestro, which allows the automated graphical

mixing of MIDI tracks, including volume, panning and other user specified Control Change parameters. The mixing movements can be recorded dynamically and played back with the performance.

Many other new features have been added to Bars and Pipes Professional, and the product's performance, claim Blue Ribbon, rivals any other sequencer available for other hardware platforms.

Bars and Pipes professional has a recommended retail price of \$379, and requires 1MB of memory. Existing users of Bars and Pipes can upgrade to Professional for \$99. Bars and Pipes will continue to be available for users who do not need these higher end functionalities, and the recommended retail price has been reduced to \$199.

Contact: The Blue Ribbon SoundWorks LTD, 1293 Briardale NE, Atlanta, Georgia, 30306. Tel: (404) 377 1514

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AaAa The standard F-800T devours word processing from day one—printing at a fast 8 pages per minute, with the crisp, jet black type that's a Kyocera trademark.

Moving up to illustrated reports, presentation charts? Just slot in a 1 MB memory board, and the F-800T takes graphics in its stride.

Yet even in its base specification, the F-800T does far more than just get you started: with 79 resident fonts, 39 resident bar code formats, plus three dynamic fonts. The F-800T manual feed tray is designed to make easy work of labels and envelopes, even non-standard sizes!

If that's not enough, the PRESCRIBE page

description language lets you use complex forms, logos and graphs—stored on Kyocera slot-in IC cards.



And with seven emulations as standard (including HP LaserJet), you can get printing straight away, whatever your software.

All at a price that makes ordinary printers look expensive. And with a full year's free on-site maintenance.

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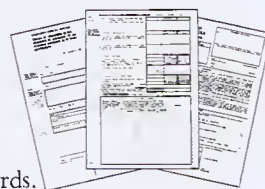
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CITIZEN'S BUDGET 24



Prices within the European 24 pin dot matrix printer market are set to reach an all time low, say Citizen, as they introduce their new 124D - a budget priced, entry level 24 pin printer, offering, they claim educational, home and small business users high value for money.

Built in the UK, this 80 column printer, retails at £279.00. The 124D is strongly backed to repeat the success of its sister product - the four year old 120D+ - which Citizen claim is Europe's best selling budget-priced 9 pin printer.

The 124D is intended to increase the Citizen Standard Range (which comprises the Swift 9, the Swift 24, the 120D+ and now the 124) and has been based on the mechanics of the award-winning Swift 24. Within this family of four printers, the 124D and the 120D+ are positioned at entry level users, whilst the Swift 9 and the Swift 24 are intended for the more demanding user.

Research organisation IDC

forecasts that during 1990 the 24 pin market will have increased by 18.5% from 1,872,120 units. It is estimated that approximately 40% of these units purchased will be models from under the 200 cps category.

The 124D is offered with a 2 year warranty.

A telephone hotline is available at Citizen's Uxbridge headquarters for technical and product advice. (0895) 72621

OPTIONS FOR THE 124D

Ribbon £4.50

Printer Stand £23.00

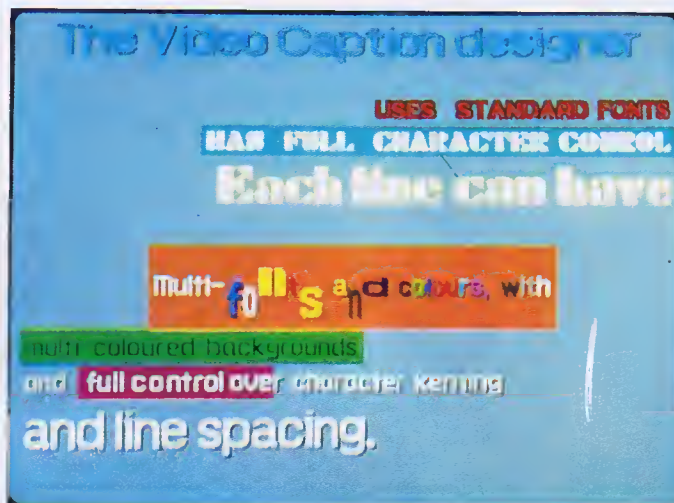
Manual Sheetfeeder £40.00

Automatic Sheetfeeder £84.00

Serial Interface £30.00

All prices are exclusive of VAT

MAZE'S CAPTION DESIGNER



Maze Technology have announced the launch of VIDEO CAPTION DESIGNER. The Shirekilo Ltd 'Video Caption Designer' is a professional level video titling and effects generator program developed from software used on Channel 4's 'Network 7' and ITV's 'Chart Show' broadcasts.

Video Caption Designer's features include: over 50 SCREEN TRANSITION effects such as PANS, WIPES, ZIP, BLINDS and REVEALS etc. which operate on text and/or imported GRAPHIC images and which can be varied to produce many more powerful effects.

- SUPER SMOOTH CONTINUOUS Vertical ROLL and horizontal CRAWL which operate in all graphic modes (including hi-resolution 704 by 560). Additionally graphics may be included in rolls and crawls.

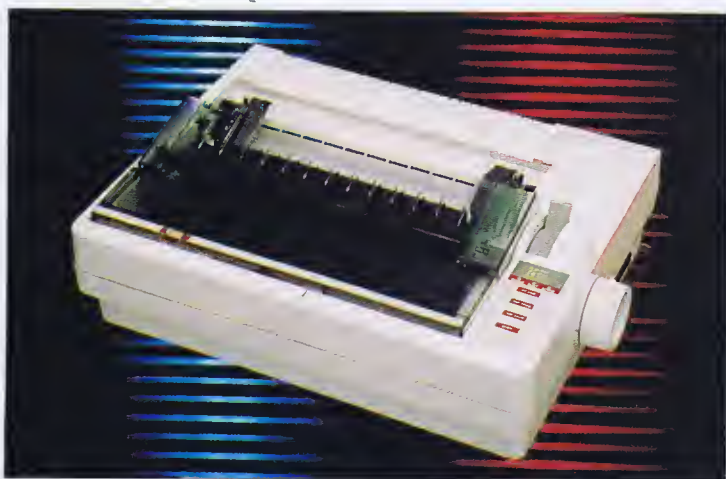
- A consistent MENU DRIVEN USER-INTERFACE which is, Maze say, quick and straight-

forward to use for professionals and amateurs alike. The built-in WYSIWYG (What-You-See-Is-What-You-Get) EDITOR combines fast operation with page and line cloning facilities to enable TEMPLATES to be used to speed the design of sets of pages.

The Shirekilo 'Video Caption Designer' software package is available at a special launch price of £199.95 (inc. VAT). It requires 1 Megabyte ram.

Contact: Maze Technology, Zenith House, 210 Church Road, Leyton, E10 7JQ. Tel: 081 556 5620

TINY DRIVE



The smallest disk drive in the world?

All drive manufacturers are fiercely competing to provide smaller and smaller drives as the note-book sized laptops reduce in weight and height and become accepted as likely to overtake desktops.

Citizen has developed what it claims is the world's smallest 3.5-inch floppy disk drive (FDD) - a mere 15mm high.

The drive, called the V-Series, has full read/write capabilities and is, say Citizen, some 53% smaller and 63% lighter than the 1-inch high FDDs currently on the market. The company would not reveal which laptop companies will be using the drives - but some major companies are already using other Citizen FDD models in the LTE range, Citizen may also be working on an even smaller, lighter product than those currently on the market.

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67,000 Amiga Fans

It is claimed by the organisers that Amiga 90, held in November in Cologne, Germany, attracted 67,000 visitors and over 160 exhibiting companies. The four day event featured Amiga technologies from over fourteen different countries. (See *AUI* January)

CBM Germany, the official sponsor of the event, occupied a central stand of over 350 sq. meters (3150 feet), and showed the complete line of Amigas, including the new Amiga 3000. The focal point of the Commodore display was a forty foot high video wall, showing a collection of Amiga produced videos from around the world.

The organisers have commented that there were several major features that proved extremely popular including the AMI Shows Art Pavillion, which had over 90 pieces of Amiga art; the Amiga-Dos-Cafe, where panel discussions and debates on the latest Amiga topics took place; and the Amiga MasterClass series of conferences on graphics, animation, video and programming.

Alexander Glos, AMI Shows' General Manager told *AUI* 'Amiga '90 is a clear reflection of the strength, diversity and intensity of the world wide Amiga market'.

AMI Shows Europe GmbH has plans for three shows in 1991, including Berlin, April 25-28; London, Wembley, June 7-9; and Cologne in November.

HELLO DICK TRACY HERE!

According to a report from MIRC (Market Research Intelligence Corporation), the demand is growing for mobile communications technologies-most notably, for numeric pagers and smaller, lighter cellular telephones. Numeric pagers, especially wristwatch models, are capturing more revenue and market share as costs decrease and operation becomes simplified. Handheld cellular phones are exploding in both revenues and shipments. (Exploding? We hope not!)

The US cellular phone and pager equipment market grew to \$855.7 million in 1989. New products, changing distribution and aggressive marketing strategies will continue to fuel the market. The development of a digital network will give more people access to cellular phones, and the development of new mobile technologies will stimulate the market.

There are four types of pagers: the tone-only, digital, alphanumeric, and tone/voice. The tone-only was once the most popular pager, but the digital pager, which conveniently displays the caller's phone number, has displaced the tone-only in popularity. Cellular phones and pagers are frequently used together with voice mail. Callers can always complete their call to a cellular subscriber by leaving a message in a voice mailbox, which in turn alerts the called party via a pager.

Existing cellular systems are near or past their capacity limits. In New York, Los Angeles and Chicago, there is presently insufficient capacity to meet the needs of subscribers. The introduction of digital technology in the early 1990's will alleviate this constraint, reducing service costs and adding more subscribers to the system.

The development and consolidation of the low-end mar-

ket for cellular phones will be the most significant market trend in the industry in the near future, say MIRC. Low-end units appeal to the consumer market, and lower prices will make the cellular phones attractive to those in sales and marketing, management or service industries. In just the last year, a low-end has developed for the portable cellular phone.

Competition in the mobile equipment industry will continue to be strong, and it will be difficult for any one manufacturer to reach the top. Of the top manufacturers, only a few percentage points separate the first from the last.

Since there are about 20 manufacturers and none was able to gain an early lead, intense competition will be the norm. In the paging industry, it will continue to be difficult to take market share away from the leader - Motorola, who of course make not only chips for paging but for the Amiga too. (How do they find the time?)

The full development of the cellular phone and pager markets is discussed in a new study, *U.S. CELLULAR TELEPHONE AND PAGER MARKETS*, just published by MIRC.

Contact: MIRC Europe, 54, rue Vandenhoven, 1150 Brussels, Belgium. Tel: +32 (2) 762 2781.

SUPERCALC 5 AT £79.00

SuperCalc 5 is now available from Action Computer Supplies at £79.00 for the single-user, LAN ready version, and £199.00 for the LAN pack version, which provides for three extra users: these packages were formally available from Action at £214.00 and £441.00 respectively.

'These reductions come into effect immediately, and follow a radical change in marketing strategy by Computer Associates recently announced: they bring powerful spreadsheet capability within reach of even the smallest user' says Sanjaya Wadhvani, Action's software business manager.

SuperCalc 5 provides multiple and linked spreadsheets; a wide range of sophisticated graphics, with over 100 types of graph in both 2-D and 3-D; Lotus 1-2-3 compatibility; and an add-in manager, allowing third-party software to interface directly with SuperCalc 5.

Action provides a free telephone service for orders and enquiries on 0800 333 333.

Action Computer Supplies, Alperton house, bridgewater Road, Wembley, Middlesex, HA0 1EH

RADIO LANS

Arlan, a wireless Lan product made by Canadian-based Telesystems, is to be made in the UK. Arlan can be installed in locations where extensive cabling is either difficult or impossible, such as listed or old buildings. Cableless Lans might also be suitable for factories or educational establishments where computers need to be mobile, or government agencies which often require temporary installations during special assignments.

Arlan's system uses radio transmission which allows communication between IBM PCs and compatibles up to 90 metres apart, in different rooms or between buildings.

It operates with Novell Netware 2.1 and 386 machines. **Contact Chasecom on (071) 251 4455.**

RE-INK

A reinking service for printer ribbons has been introduced by a company called Mektronic.

Apart from the obvious cost saving - 80-column ribbons can be reinked for £0.95 - there are other considerations to take into account, says Mektronic.

A well-inked ribbon enables the printhead to be positioned further from the paper and thus reduces wear on the printhead. And there is the purely environmental consideration - think of the waste of throwing away a printer ribbon which could be reinked up to 40 times!

COMMODORE JOINS ELSPA

Commodore acknowledged the number one manufacturer in the computer entertainment industry, has become the first hardware company to be accepted into the influential European Software Publishers Association (ELSPA).

Commodore's membership of ELSPA, they say, reflects the company's long standing commitment to the software community and the world wide success of its C64s and Amigas which together have topped the 20 million unit sales mark.

ELSPA's chairman Andrew Hewson said: 'Commodore's commitment to the computer entertainment sector has been apparent for some time now and I'm sure they will bring considerable help and advice in driving ELSPA towards achieving its objectives.'

Steve Franklin, Managing Director of Commodore, said: 'Without the support of the software community, Commodore is like a car without petrol and without us, they are like filling stations without cars. Together, we are the single biggest force in computer entertainment.' Filling stations? Cars? There is, we can authoritatively state, no truth in the rumour that Mr. Franklin drives an electric-motored Rolls Royce or that Commodore is to be taken over by Shell or even that the next Amiga is to be named the C5.. (We hope!)

STAR REWRITES POSTSCRIPT PRICES

Star Micronics has slashed the price of its LaserPrinter 811 StarScript from £2699 to £1999, making it, they claim, the first 8 page per minute Postscript compatible laser printer available under £2,000.

Roger Bayley, Star's Sales and Marketing Director said 'Our Postscript compatible laser is now the same price as other market leading nonpostscript lasers. We have disassembled every buying motive for a current laser printer, and in every case we at least match the most popular need, or beat the competition hands down. It will be interesting to see how the market reacts to this new pricing structure'.

Star has also reduced the prices of the starScript upgrade for its nonPostScript laser printers from £888.00 to £499.00. Memory expansion boards have been reduced to £599 for 2 MB and £1099 for 4 MB. The new prices are available immediately.

Contact: Star Micronics UK Ltd. (0494) 471111.

BUSINESSLIKE COMMODORE

Commodore UK is increasing its efforts in the business PC market in the first quarter of 1991. Terry Cooke, national sales manager, pointed out that the company had prepared for the initiative by enlisting 50 'premier' dealers, and improving the main distribution channel.

'I can see a situation where we're very successful in the next two to three years'. He said the Commodore PC range will be including a 25MHz 486, and two slimline 386SXs. There will also be further product launches including a 386SX machine and other laptop computers. 'CBM recently launched its first MSDOS laptop, the LTE 286.

Commodore has enlarged its staff at its Maidenhead headquarters in anticipation of increased business. 'We have a fairly significant support function with 25 people - rising to 30.

CBM is also using the Amiga for business applications and currently has Unix International version 5.4 on Amiga 3000s and Amiga 3500s under beta test at a number of universities, including Cambridge University' said Cooke.

THINK'S CLIP ART No. 1 TRANSPORT AND SIGNS

Think Ltd., developers of the Concept Keyboard, have announced their first in a series of Clip Art packages - Transport & Signs. This is 800K of data which equals more than 200 images. It includes: Trains, Bikes, Trucks, Aeroplanes, Balloons, Buses, Motorbikes, Cars, Hovercraft, Helicopters, Ships and Submarines.

And for Signs it has such as: Safety; Inflammable; Requests; No Smoking; Highway Code.

The Clip Art is in full colour and can be used in all Amiga graphics programs: Desktop publishers, Word processors, Video, Art, Databases etc.

It also includes a guide to create many more images and how to use them in a variety of programs. Price £15.00

G2 BROADCAST VIDEOCENTER

G2 have launched a Broadcast VideoCentre, a VC3 Genlock Coder & Keyer for the Amiga. The VideoCentre VC3 is a full broadcast quality genlock, coder and keyer for use with all Amiga models including the new 3000 series. It has been designed to conform to the IBA Code of Practice and incorporates G2's latest coder technology. The main electronics are housed in a 1U 19" rack mount case. The unit has Composite, RGB, Component (YCrCb) and S-VHS (YC) inputs and outputs as standard. The unit incorporates 3 channels of keying and will therefore key the Amiga's output over any of the above video formats. The unit can be operated by software without the remote control.

The VC3 is designed to be installed in a TV studio and requires a good quality external source of black and burst. It is designed for use with stable (time base corrected) signals. **Contact: G2 Systems, 5 Mead Lane, Farnham, Surrey, GU9 7DY. Tel: (0252) 737151.**

SUNRIZE SWEETENS AUDIO

SunRize Industries has announced that its Amiga-based 'Audio for Video Post Production System' is close to completion. Although no final price or details have been released, the system facilitates features needed for video production. Both hardware and software are under development.

To provide the analog to digital conversion, users will have their choice of two cards. Both cards work on Amiga 2000s or 3000s. The first card features a 12 bit sampler and player, on-board microprocessor, ram, SMPTE in/out, MIDI in/out, and linear phase low pass filters. The filters can be adjusted by software for a wide range of cut off frequencies. sampling rates of up to 44KHz are supported.

The second card, in the process of being licenced from Vision Quest, supports multiple channel 16bit in/out. Also featured is on-board ram, digital low pass filters, and a Motorola DSP chip (the same one used by Steve Jobs' Next computers).

To support the hardware, modular software is being developed. Modules to record and edit direct to hard disk are well along. A cue list module is also under development. All modules support time code.

With this new Audio Sweetening System, users will be able to record their entire sound track to hard disk along with SMPTE time code. They can then edit the sound and specify SMPTE in and out points. A final mixdown can be performed digitally, followed by playback to video tape synced to time code.

Both the low cost 12 bit hardware and the more expensive 16 bit hardware are being developed. the 12 bit card will feature a signal to noise ratio and frequency response better than most professional quality video tape recorders. However the 16 bit card with its 'CD quality' sound will be available for those who really need it.

Contact: SunRize Industries, 2959 S Winchester Blvd. suite 204, Campbell, CA 95008. tel: (408) 374 4962

1.5 MILLION PAGE LASER PRINTER

Ricoh have announced the launch of a new laser printer which they claim 'combines laser printing excellence with the latest scalable font technology to provide a powerful, low cost and fast alternative to a PostScript Printer'. (Well, they would say that wouldn't they?)

The LP4150 FLEX, is based on the well-known heavy duty 15ppm Ricoh engine and has a high-duty cycle of up to 25 thousand pages per month and a life time of around 1.5 million pages.

The new printer introduces FLEX font scaling technology in combination with a BluePoint BP100A Font Scaling Co-Processor to add high speed, scalable font processing capabilities to the widespread PCL 4.0 language used by the HPLJ and compatible printers.

Drivers taking advantage of scalable fonts are already available for such popular software packages as Windows versions 2 and 3, Microsoft Word, Wordperfect version 5.1, Wordstar version 6, Ventura Publisher etc.

The LP4150 Flex comes with a standard complement of 35 scalable typefaces, which are compatible to the 35 Original PostScript fonts and the printer offers increased typographical flexibility by its compatibility to the extensive Bitstream Fontware Type libraries, being used in a wide range of word processing graphics and desktop publishing applications.

Ricoh believe that this new printer will be of particular interest to users of advanced word processing, desk top publishing, spread sheets, advanced business graphics and shared printer users in the PC LAN environment. The LP 4150 will have a recommended retail price of £3.995.

PERFECT FIT FOR PERFECT SOUND AND AUDIOMASTER

SunRize Industries, has announced tests confirming compatibility between Perfect Sound III hardware and the new Oxxi-Aegis AudioMaster III software. The addition of digital gain and a hardware-based sampling clock to Perfect Sound III improved its sound quality and ease of use at the expense of compatibility with AudioMaster II. With the recent release of AudioMaster III, perfect sound compatibility is again available, say SunRize.

AudioMaster III is software that provides sophisticated digital sound editing functions to the Amiga owner (See review *AUI* January).

Users of AudioMaster can create instruments for Sonix. Audiomaster also allows users to set multiple loop points in a sample. This can be used to create musical scores that take up less memory than was previously possible. However, AudioMaster requires the user to purchase a sound sampler as it is software only. SunRize told *AUI* that Perfect Sound III now works well with AudioMaster, allowing users to sample sounds with the best possible quality.

Perfect Sound III comes with a high-quality stereo audio sampler that attaches to the Amiga parallel port. Built-in digital gain, noise filters, voltage regulation, sample and hold circuits, hardware based sample timing, and microphone pre-amp, make, say SunRize, Perfect Sound possibly the best eight bit sampler available for any computer. Perfect Sound comes with editing software which users employ to cut, copy and paste sounds. IFF instruments can be created and real time effects such as echoes and delays, and now users have the option of purchasing additional software, such as AudioMaster, for use with their Perfect Sound hardware.

SCHOOLS ON LINE

A British Computer Society (BCS) report called for online computer services to schools, so pupils can gain fast access to a wider range of sources than school library books can provide.

The report, Classrooms Without Walls, said that online computer information systems will be beneficial to pupils' study and provide a valuable introduction to IT.

(Judging from another report in The Guardian, some school books are so out of date that this is indeed good news for pupils!)

"QUOTES OF THE MONTH" on Japan

On Unix in Japanese:

Steve Khann, V.P. Trame Technologies Inc: "Once you double byte the product, you can go into the Chinese and Korean markets and have a leg up"

A leg up, really? Is this a Japanese shaggy dog story?

And from John Hann, General Manager NEC UK: "Japan is certainly a strong force to be reckoned with and I think that there will be strong competition between the two (East and West) but at the end of the day I don't see Japan conquering the world."

Well that's a relief, but perhaps we should ask our late motorcycle, TV, and sewing machine etc. industries.

(By the way NEC is a Japanese company too)

EXPRESSWORKS DYNACADD

Expressworks have announced the release of Ditek International's 2D and TRUE 3D CADD package, DynaCADD.

DynaCADD is a 2D and TRUE 3D general purpose Computer Aided design and Drafting software solution for electrical, mechanical, architectural or civil applications.

DynaCADD revises, designs and details drawings in 2D and TRUE 3D while combining an extensive collection of features, fast display speed and seamless performance including the capability to read and write DXF file formats.

DynaCADD is claimed to remove the tedious work of detailing. The automatic dimensioning features are said to be flexible and easy to use. All selections are made with the single press of a button, whether dimensioning to European or North American Standards.

DynaCADD sends all or any portion of any drawing at any scale, including best fit, to all popular Pen Plotters, Dot Matrix Printers, Laser printers, Postscript Printers and Disk files.

The package is also available on MS-DOS 286/386/486 based systems.

DynaCADD's attention to ease of use substantially reduces the learning curve normally associated with any CADD program employing features such as context-sensitive online help and documentation, while taking full advantage of a sophisticated graphical interface.

DynaCADD performs all of the necessary text functions, attributes and manipulation including the use of professional Desktop Publishing fonts from AGFA Compugraphic. A full Vector Font Editor and MAKEPLOT program are also included.

Expressworks say DynaCADD offers an alternative solution to expensive and difficult to use CADD systems, bringing main frame capabilities to the CADD professional at a fraction of the cost. The RRP of DynaCADD is £650.00 plus VAT. There are also special educational prices.

Contact: Expressworks Ltd.
75 Heath Lane, Upper Hale,
Farnham, Surrey, GU9 0PX.
Tel: (0252) 726255.

But Seriously

HiSoft Devpac 2 Assembler/Debugger

"Devpac has it all plus a lot more" - ST Format, Dec 88

Consistently acclaimed as the best assembler development system for the Amiga, Devpac Version 2 is a complete package including:

- ✓ Powerful, extremely fast assembler with macros, conditional assembly, include, optimisations, local labels, multiple hunks, producing executable or linkable o/p.
- ✓ Advanced, multi-window symbolic debugger with single-step, dynamic conditional breakpoints, full expression evaluator, disassembly to disk etc.
- ✓ Integrated, fast and easy-to-use editor so that you can create, assemble, debug, edit, assemble etc. all without leaving the editor. CLI versions are also included for those who have strong editor preferences.
- ✓ Fast Linker, standard include files and full, ring-bound documentation.

With full technical support and constant improvement, Devpac has no rivals - most of the top software houses who develop on the Amiga use Devpac - why don't you?

SAS/Lattice C ver 5.10 New!

"... a very professional package" - Transactor May 89

Quite simply, SAS/Lattice C 5 is the best C system you can buy for your Amiga. Having sold more than 12,000 copies worldwide, the package is used by professionals & hackers alike. Upgrades from version 5.0x cost £34.95 - send your master disks back.

- ✓ Powerful, enhanced C compiler with full 68020/68030/68881/68882 support plus screen editor, faster linker, assembler, librarian, code profiler, disassembler & more.
- ✓ Advanced global optimiser which gives your programs performance improvements of up to 40%. You can optimise for execution speed or program size.
- ✓ The CodeProbe source level debugger with 4 separate windows, allowing you to single-step through source code, set source line breakpoints, examine, modify and continuously monitor your C variables and much, much more - invaluable.
- ✓ Workbench 2.0 support and environment, AREXX support, C++-style comments.

SAS/Lattice C 5 has improved ANSI compliance, function prototyping, is multi-tasking & re-entrant, has nearly 300 library functions and comes complete with full technical support.

HiSoft BASIC Version 1.05 with Extend

"HiSoft BASIC is an excellent choice" - ST/Amiga Format March 89

HiSoft BASIC is the answer to your programming prayers, an extremely fast, interactive, standard and easy-to-use system, used by many top software houses all over the world.

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- ✓ No limits to your program size and no limits on the size of any variable, memory permitting, plus the ability to link easily with C and assembler programs.
- ✓ Totally interactive system with easy-to-use Intuition editor allowing mistakes to be corrected simply and quickly, substantially reducing development time.
- ✓ Extremely close compatibility with AmigaBASIC and Microsoft PC QuickBASIC 3.

Complementing HiSoft BASIC, **HiSoft Extend** is a comprehensive set of library routines for IFF files, gadgets, menus, sub-menus, sound, HAM mode and more. Normally costing £19.95, we are including this package, **for only £5 extra** until 1 January 1991, if you use the order form below.

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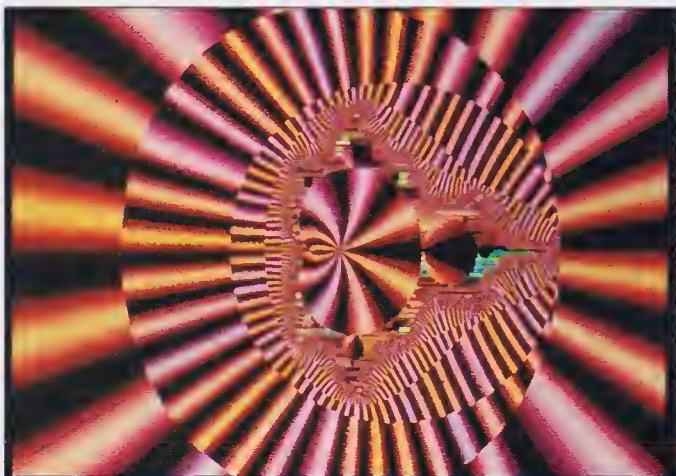
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A CATALOGUE OF CHAOS



Frachaos, who claim to be the first UK company to specialise in fractals, have launched a new catalogue. Entitled "The Catalogue of Chaos", it is said to be the first of its kind in the UK and includes many fractal-related goodies, Frachaos claim, not previously available in the UK.

Fractals is the new branch of geometry that expresses the beauty, intricacy, and simplicity of the natural world through the computer and variable algorithms. (see review of Scene Generator in December 1990 AUI.)

Fractals have made their mark in fields as disparate as 'frontier' medicine and pop music videos.

Computer artist and lecturer in Computer Graphics, Jake Davies says 'Since the Equinox programme was screened two years ago there has been a rapidly growing interest in fractals and chaos, not only in mathematics and the sciences, but also in entertainment and fashion etc. fashion designers call it the paisley of the 90's.

Unfortunately it has been hard

to get hold of the best products in the UK - and that is why we set up Frachaos in the first place. We find all kinds of people are interested in chaos, so we have had to cater for beginner and enthusiast alike. Recently there has been a lot of interest in Fractint V.14, but our compilation of videos, books, shareware, fine art prints as well as commercial software is proving equally popular.'

The Cornish company's catalogue includes some 12 items new to the UK as well as contact addresses for enthusiasts.

Copies of the Catalogue of Chaos are available free from: Frachaos, Higher Trengove, Constantine, Falmouth, Cornwall TR11 5QR. Tel: (0326) 40973 (24hr answerphone)

RAG TRADE



Director of Marketing and Weightlifter Miller.

Not content with putting colour into word processing, New Horizons have gone into the rag trade. They are now not just marketing ProWrite (see review in this issue) but selling T shirts for a mere \$15, bearing their corporate logo and on the back the immortal words 'Prowrite - Advanced word processing for the Amiga'. Now that should get you some attention at your local disco. So, too, would Party Queen Debbie 'Miss Universe' Miller, New Horizon's Director of Marketing seen here modelling the designer shirt. What about a New Horizon's bikini, Debbie? (And to make that comment a little less apparently sexist, what about a photo of AUI's news editor in his boxer shorts? Ed.)

RC-500 GOLDEN IMAGE A500 RAM EXPANSION

A500 RAM Expansions? It has been said that everyone should have one! Golden Image have taken the message literally and have added the RC 500 512KB Expansion RAM card to their apparently evergrowing range of Amiga peripherals.

Like all other A500 expansion cards, the RC 500 fits in the underside connector on the Amiga, or on the main PCB inside the Checkmate A1500.

The PCB is bigger than many but it does have a few extra features which make it an attractive buy for Checkmate A1500 users.

The first is that it has an insulation sheet on its underside (solder side). This prevents possibility of short -circuits on the A500, and which is useful for the A1500. Another relevant feature for A500 and A1500 users alike, is that the disable/enable switch is not on the PCB, but on the end of an extension

cable. This eliminates the need for lifting the Amiga to flick the switch and will allow A1500 owners to switch off the extra memory.

The RC 500 is supplied with a battery-backup clock and retails at £47.22 RRP. Golden Image can be contacted on 081 518 5785.

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ProWrite 3.1.1

John Walker tests a new version of an old favourite

ProWrite has long been the best of the Amiga's graphics-orientated word processors. What has given it a great advantage in the past over its main rivals - KindWords, VizaWrite Desktop and Pen Pal - is the fact that you can type at speed, and still see what you're typing on the screen, even with documents of 5,000 words or more.

The latest version increases its pre-eminence by adding enhancements that take it closer to a page layout or desktop publishing program. It is not so much a word processor now, as a manuscript processor.

The main improvements include:

Multiple columns

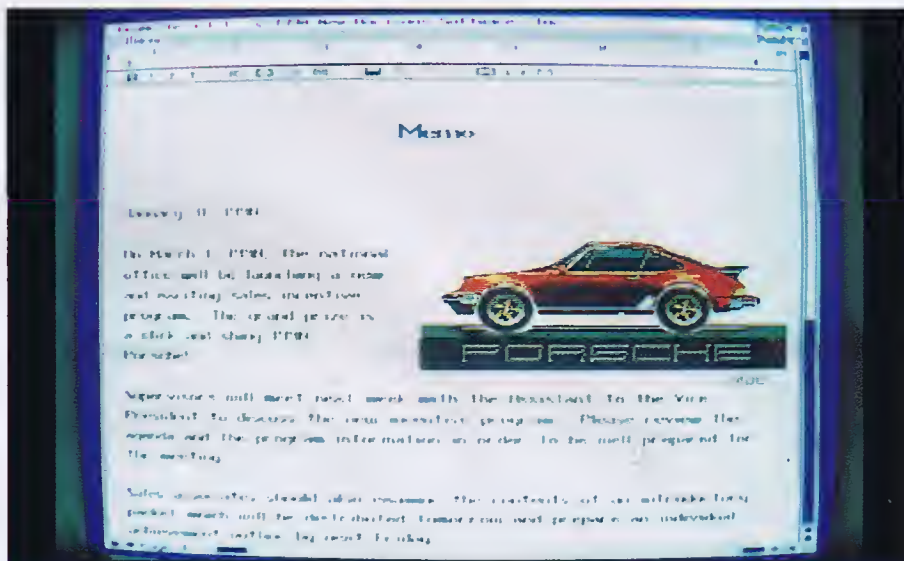
Better use of a dot-matrix

printer's built-in fonts

Better support for colour graphics

An extensive thesaurus together with a 100,000 word spell checker

ARexx support for macros and



so that it can be linked to other programs

Even before you load the program,

ProWrite 3.0 looks classy. It is now packaged in an elegant, marbled slipcase that contains its two disks and a ringbacked



196-page manual. The image is only slightly dented by the fact that there are also additional loose sheets containing amendments to the manual that take into account the latest changes.

ProWrite 3.0 will run on any Amiga with at least 1 megabyte of RAM and two drives. It is compatible with Workbench 1.2 onwards, including the new Workbench 2.0. You will, of course, need a printer to take advantage of the program - and a colour printer will enable you to use all of its facilities.

One of its two disks contains a standard 1.3 Workbench together with some special fonts, a System Mover to make it easy to move fonts and printer drivers from one disk to another, and a Convert program that will convert Scribble!, Textcraft and TextPro files to ProWrite format while maintaining most of their formatting. Its time Convert was extended to include other word processors, such as KindWords and Pen Pal.

The second disk contains the ProWrite program itself, together with its dictionary and thesaurus. Neither is protected and may be easily transferred to hard disk.

ProWrite's multiple column feature, together with its improved handling of graphics, make it suitable for the production of simple newsletters or reports. Soon, too, with the aid of an enhanced ProScript program, you will be able to print to a PostScript laser printer for the highest possible quality of output.

"If you need to add a space in one column without jumping to the opposite column, you can use a soft Return by pressing the ALT key and the Space-bar"

You can have up to five columns of equal size to a page, with their width, the space between them, and the size of the margins being set from a special requester. In practice, two columns work best. The reason is that narrower columns look too ragged, due to the program's lack of automatic hyphenation - the breaking of words of more than one syllable at the end of lines.

Without hyphenation, narrow columns may contain no more than two words. It is possible to go through the text manually putting hyphens in words so that break over two lines, but this can be tedious. With columns, too, ragged right justification looks best. Having lines of text fully justified to left and right margins merely emphasises some unsightly gaps between words.

Columns come in two sorts - newspaper, in which text flows from the bottom of one long column to the top of the next and side-by-side, in which text goes from the

bottom of one paragraph to the top of the paragraph opposite it so that their first lines align.

This side-by-side column feature will be a boon to one select group - theatrical, TV or movie scriptwriters who need to be able to put the names of characters and description of actions or camera movements side-by-side with their dialogue. The cursor moves from one column to the next with the press of the RETURN key. If you need to add a space in one column without jumping to the opposite column, you can use a soft Return by pressing the ALT key and the Space-bar.

"The latest version increases its pre-eminence by adding enhancements that take it closer to a page layout or desktop publishing program"

There are two ways of printing from ProWrite: you can do a graphics dump, which will transfer what you see on the screen to paper or you can use your printer's own fonts. The disadvantage of the graphics dump, apart from its slowness, is that bitmapped fonts tend to look ragged when printed. ProWrite does have a smoothing option which will improve the printed appearance of bitmapped fonts, but the results may still be jagged.

With earlier versions of ProWrite, you could only use one of your printer's fonts in a document. That has all changed. You can now print NLQ text with Pica, Elite, Condensed or wide fonts at the same time as you print your graphics, thus obtaining the best quality of output available, printed at the fastest speed.

You can also scale the size of your printout, from 25 to 400 per cent. This enables you not only to produce large posters or banners - since you can print in upright or landscape orientation - but to achieve a higher resolution of output from bitmaps by setting a reduction value of 50 per cent or more, selecting a higher print density and using double-sized (or greater) fonts and graphics.

So that what you see on screen will be what you get when you print using NLQ fonts, ProWrite comes with special screen fonts that match printer fonts as closely as possible. The match is not exact, and the program inserts extra spaces between words to keep lines to the right length. An Optimal Spacing option minimises these gaps, although on occasion they can look ugly.

Colour printing is improved. ProWrite can handle any image in standard IFF format, including HAM with its 4096 colours. It cannot reproduce that number of

colours, any more than your average printer can. Instead, it uses an optional system of dithering to suggest different shades of the same colour. The graphics are shown on screen with their dithering so that you can see what they will look like when printed.

You have the choice of no dithering, or of four or sixteen levels of shading for each colour - or you can have a colour picture converted to grey shades if you are using a monochrome printer. Pictures can be re-sized on the page, a technique that works best with those that have no shading.

ProWrite's enhanced spelling checker needs to be loaded into RAM for efficiency. You can have it check each word as you type, which does not work well if you run it from floppy disc as it accesses the disc constantly. From RAM, the process is instantaneous. If the checker does not recognise a word it will either flash the screen or beep or both.

You can then click on the spelling checker's Look Up button to obtain a list of suggested alternatives. You can, of course, also check individual words, part of your text, or the whole document in one go. The checker is reasonably quick, though not as fast as in previous versions of ProWrite, possibly because it now contains more words.

It took 30 seconds to check a 4,000 word document in which only the last word was incorrectly spelt, which is 10 seconds faster than Pen Pal though slower than WordPerfect.

"So that what you see on screen will be what you get when you print using NLQ fonts, ProWrite comes with special screen fonts that match printer fonts as closely as possible"

The dictionary is a big one, including not only rarely used words, such as "thyrsi", but even one - "gond" - that I can't find in any other dictionary. You can also create your own user dictionary, which is saved as a text file so that it can be edited.

The program's thesaurus also works best from RAM and offers a wide choice of words. Selecting any word in its list will provide you with a further set of synonyms. Using it often requires you to type the word for which you are seeking alternatives. If, for example, you select "launching" from your text, the thesaurus will report that it knows no such word. You'll need to type "launch", which it will recognise.

ProWrite now supports ARexx, the macro language that forms part of Workbench 2.0 and which is also available on

its own. Indeed, it is one of the minor limitations of the program that its macros depend upon ARexx. Two example macros are included with the program - one will transpose mistyped letters, changing "hte" to "the", and the other will perform simple calculations.

Without ARexx, though, you cannot automate any of the program's functions. Even with ARexx you can't automate all, since many of ProWrite's functions, such as saving text, bring up requesters which have to be filled in manually. It would be a help if the program, like many other word processors, could remember and play back sequences of key-presses to make certain actions automatic.

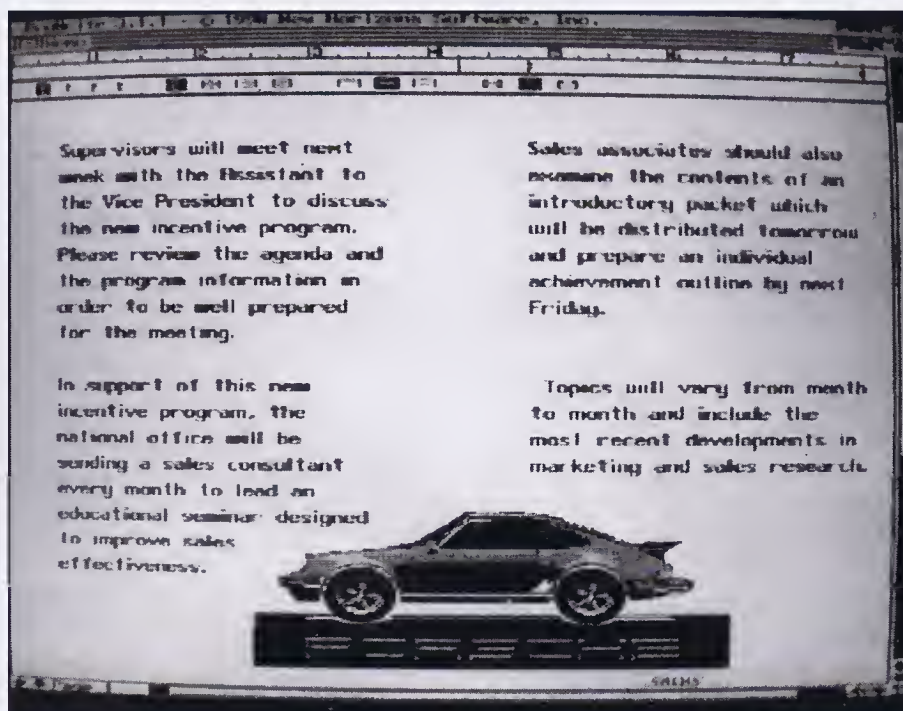
"You can not only discover the number of words in a document, but also the number of characters, lines, pages, paragraphs and pictures, together with the average word and sentence length"

In most other respects, though, ProWrite is user-friendly, allowing you to customise its appearance and functions. You can, for example, change the screen colours and turn off the default flashing cursor, which I find an irritation. Many of the options on its menus have keyboard equivalents. Some actions, such as opening a document, printing, or editing a header or a footer, can be carried out by pressing a function key. Others, such as selecting a word or a sentence can be worked by clicking the mouse button two or three times.

You can not only discover the number of words in a document, but also the number of characters, lines, pages, paragraphs and pictures, together with the average word and sentence length and an estimate of its readability, based on US grade levels. (This may not work perfectly. In a document where I had not left a space after full stops, it decided that my average sentence length was more than 400 words and that a grade level of 317 would be required to understand it!)

You not only have headers and footers, but chose between five different styles of numbering the pages, two styles of inserting the time into your document and six ways of adding the date.

There is also an Undo function that will reverse your last action, such as deleting text, providing it is chosen immediately after the action you want to change. And New Horizons has taken the first step in equipping ProWrite with style sheets or paragraph tags such as are found on high-end desktop publishing programs.



It is a small step, but a beginning. You can now save one font, style attribute and colour and one format - margins, tab stops, alignment and paragraph spacing - and apply them to selected characters or paragraphs. Another useful function is the ability to change words into upper, lower or mixed case - in the latter, just the first letter is initialised. You can sort paragraphs in ascending or descending alphabetical order.

ProWrite allows up to ten documents to be open at any one time - and their length is dependent only on the amount of available memory. All open documents are listed on a menu and you can move from one to the other simply by clicking on a name. It, of course, encompasses all the usual word processing functions, from mail merge to cutting and pasting, and searching and replacing, text.

The latest enhancement is a Speak command that makes use of the Amiga's built-in speech synthesiser to speak all or selected parts of your document in a user-definable voice. It can be useful to those with poor sight or for proof-reading a document, though it is a minor nuisance that the on-screen requester that remains while speech continues obscures part of the document.

ProWrite's display is uncluttered. There are scroll bars along the right-hand side and bottom of the screen and a ruler, which can show inches or centimetres, along the top. If you prefer, the ruler can be invisible. But it is useful because you can carry out certain functions, such as changing the justification and line or paragraph spacing of your document, by clicking on icons within it.

New Horizons also publishes two disks of ProFonts, well-designed bitmapped fonts for use with the program, which are a great improvement over the Amiga's standard fonts. Also available will be French and German dictionaries, each containing more than 85,000 words.

The main disappointment at the moment is that ProScript, New Horizons' PostScript printer driver, is not fully compatible with ProWrite 3.0 and will not support such features as multiple columns. A new version of ProScript is promised, although it might have been better to have had PostScript compatibility incorporated in the program itself.

"ProWrite comes nearer to perfection than most word processors"

But never mind. Nothing is perfect. The joy is that ProWrite comes nearer to perfection than most word processors, particularly those that incorporate graphics. And it continues to improve significantly, while still being easy to use. If only it supported that new Amiga standard, AGFA Compugraphic outline fonts, it would be the ideal word processor for all occasions.

J.W.

Price: ?

Contact: New Horizons Software, PO Box 43167, Austin, TX 78745.
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SOF530 - SkyFight, Bleed, Shitout (hot v137)
FF357 - EMPIRE, new version multi-player game, keyboard or modem
FF347 - DRIP arcade style game, dodge the pipes etc. Good!
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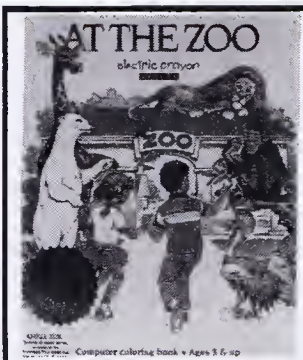
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PRINTAPEN 5000

Zen comes to the Amiga? It is the sight - not the sound - of one hand printing that Pat Kelly found fascinating

Ever since the launch of the Amiga A1000 way back in 1985 many third party developers have created interesting pieces of hardware and software. A lot of these products expanded the Amiga dimension and now Printapen 5000 hopes to do likewise under the guise as "the world's first hand-held inkjet printer".

The Printapen is supplied with a "dongle" which plugs into the Amiga's serial port. This "dongle" has a RS232 input for the Printapen and a power jack input, through which the mandatory power to the unit is supplied. A 5 Vdc mains adaptor is supplied as an optional extra, although it is needed to supply power. When the power jack is inserted into the side of the "dongle" it protrudes leftward into the path of the disk drive port on the A500, but does not effect the A1000 and the A2000 as only the phone sound jacks are positioned on the left side of the serial port. I suppose that A500 2nd drive owners will want to partake in some design change and reposition the jack on the top, as opposed to the side of the "dongle".



The Printapen uses the serial RS232 connector so this has to be taken into effect when setting up the Amiga preferences, or alternatively while programming. Once that the serial port has been chosen for printer output, from the workbench preferences, Printapen will respond to printer output commands with only one small difference. Whereas a normal printer will start printing, unless it is off-line, the Printapen's "ready" LED will flash, highlighting that the unit has text to output. The print is activated by pressing on a button on the unit while running the printapen along a paper-based surface, hopefully in a straight line. The end-of-line signal stops the print until the user repositions the "pen" for the next line of print.

"Whereas a normal printer will start printing the Printapen's 'ready' LED will flash, highlighting that the unit has text to output"

Printapen's biggest attribute must be that it reaches other parts that other printers cannot reach. It is perfect for producing neat and tidy printouts for filofax pages, wall planners, desk planners, order forms, and address labels. It can also print on curved surfaces and twisty lines - only Printapen can do this! - in their advertisements they show it working on the curvy body of a girl. We did not prove their claim. This is what Printapen has been designed for as it cannot print long documents, but only about several lines, a task which it will perform quite easily.

There are two fonts available that can be selected from ESCape character controls. These fonts allow for normal and condensed printing and the print quality is of Near Letter Quality standard.

The Printapen, like normal printers, is controlled via ESCape characters and as such can be controlled from application programmes. This is where the main use of the "pen" may be. Users can write application software for specific useage of the "pen", such as serialisation of products.



The base of the "pen" measures approximately 2 inches by 1 inch and comprises the printhead and a "tracking" roller which measures distance travelled. The character printed will only be output relative to the distance travelled and therefore fluctuations in travel speed do not effect the output quality. What does effect the print is the inability to keep the unit travelling along a straight line when required, but any straight edge, such as a ruler, will dispel this slight flaw. The user of the unit will not be printing very long lines, so small irregularities in straightness may not be a problem, it may even be desired.

The ink is supplied via the HP inkjet reservoir in which is a refillable unit and is common in a lot of the HP series of printers and, so, should not be too difficult or expensive to replace.

At £350 the Printapen will not be the perfect peripheral for the normal Amiga user. I see it more for commercial use for corporate business users, probably not unlike companies such as Marks & Spencers, who have found very useful employment for the Pasion Organiser within its salesfloor organisation and could possibly do the same for this neat device.

P.K.

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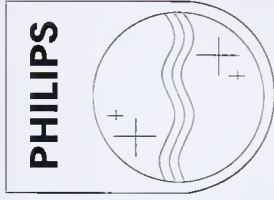
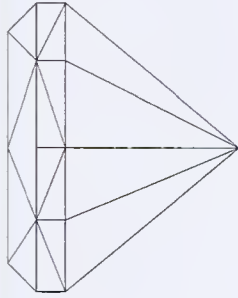
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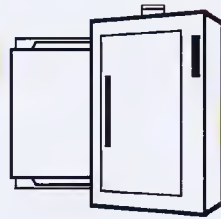


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MY PAINT

PRISM COMPUTER PRODUCTS

'BRILLIANT' SAYS NICHOLAS AGED SIX.
*Martin Witton, somewhat older,
 enthusiastically agrees*

A PROGRAM JUST FOR KIDS?

Take a blank screen, an Amiga, a mouse, a small child and 'My Paint' – the result – magic!

Watch the child's face as he sees his creativity unfold in front of his eyes. By the control of the mouse, the concepts in his mind translate onto the screen, which delight him. He explores the possibilities, tries out the options – no need for him to read the accompanying manual, experimentation is for him enough.

His picture emerges as he finds he can choose a colour, using a small brush or a large brush, make squiggles, dots, erase the last stroke, mirror his pattern on the screen and then – amazing – can rapidly change the colours all by a simple move-

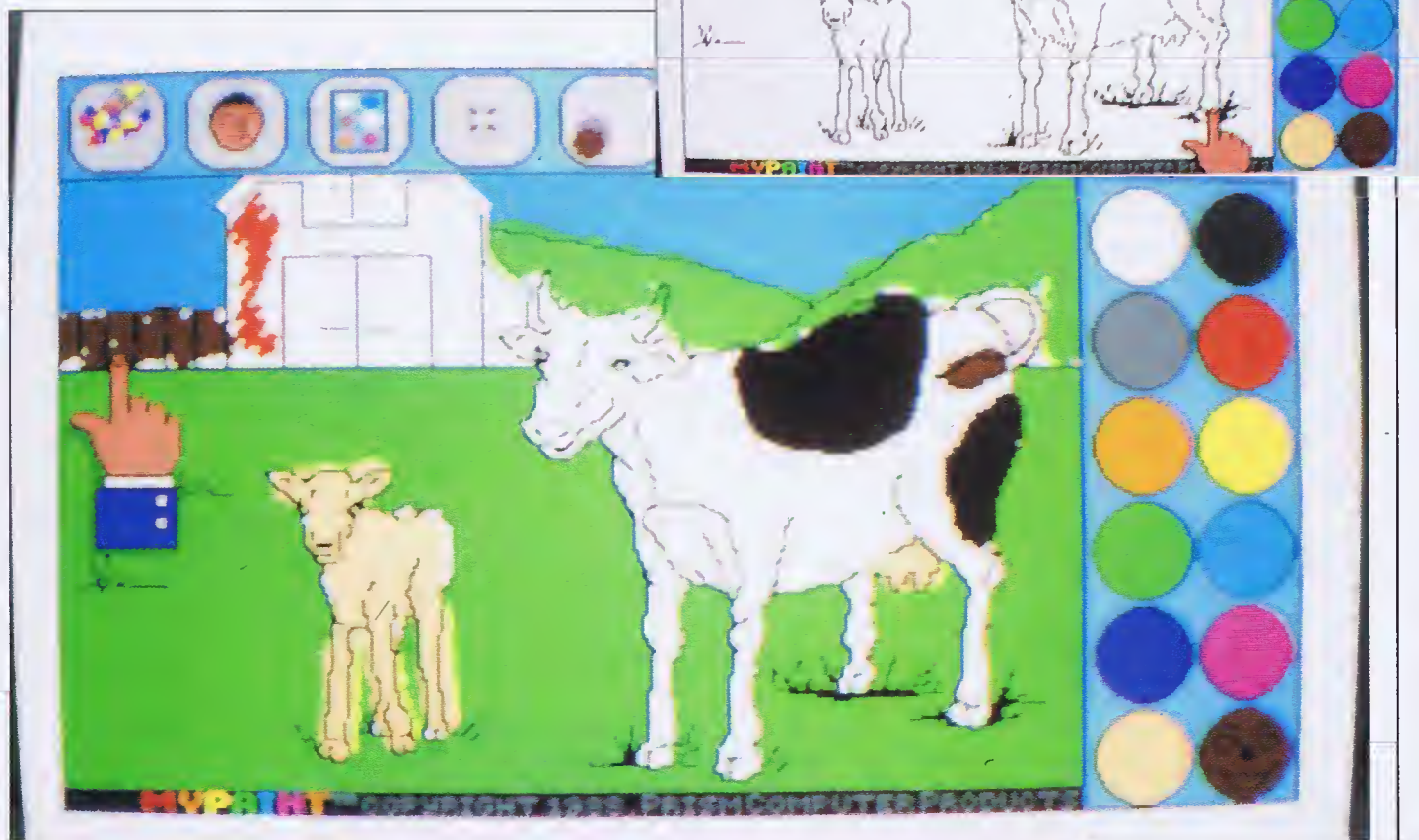
ment with the mouse.

His picture takes on a new magic as he discovers he can use the colour brush which draws with 7 of the 12 colours creating a rainbow effect. When it meets his satisfaction he can print it out to proudly display for all to see. All this with no-mess, no spilt water, no rubbing out and no irrevocable mistakes.

He can create the perfect picture, his own ideas devel-

oped on a screen and then transferred to paper. Wicked fun!

He explores further, knowing he can go back to his own creations later. A parcel appears on the screen tied with a big bow. He finds to his astonishment that a surprise



picture waits for him.

He can colour it in, no going over the edges or fear of the paint running into the last colour. The brush fills in each section separately. He changes his mind, a red background, no a blue background, no a yellow one – then wonderously a flick of the mouse and the picture flashes psychadelically going through various combinations. He can even make part of the picture flash up different colours while the rest remains static. He can add his own shapes to the prepared picture while multi colour cycling transforms the screen.

Ah there is one he likes, let's try this one. He can save it the disk.

What are the lips for? He tries it out and.... wow – sound associated with the picture is emitted. A musical picture that he himself has created. Satisfaction shows on his face, his eyes shining, ideas forming fast – what else will unfold?

There are 28 drawings on the diskette, all of which can be coloured in by selecting the colours from a 'paintbox'. The mini-menu displays the paint options, large enough for even a small child to use, the graphics logical enough for instant recognition but without protruding into the main picture in any way.

Many programs and games claim to give 'hours of fun', MyPaint certainly does.

The variations, possibilities and combinations are more than enough to guarantee that children will not tire of it. It won't become just another disk at the back of the box.

A word of warning – it could cost a lot of money if you have more than one child but only one Amiga! Luckily though 'My Paint' is not copy protected so you are allowed to make one back-up copy of the program.

A word of warning – it could cost a lot of money if you have more than one child but only one Amiga! Luckily though 'My Paint' is not copy protected so you are allowed

to make one back-up copy of the program.

The diskette is yellow so children won't mistake it for a 'grown-up' disk, and they will know if you have sneaked a go after they have gone to bed, unless you remember to safely replace it!

There are 12 colours to choose from, it is a pity that you cannot mix the colours to make more, but the flashing pictures and colour brush make up for this.

In addition there are new characters, objects and sounds available in optional 'My Paint' data disks, which includes 27 new pictures and sounds.

Majelix Character Disk – this is a sample of some of the Majelix characters from the Majelix Data Disk – Majelix is a 'beginning reading' method combining art and science.

Numbers, Objects and Shapes – Includes objects such as telephones and cars utilizing numbers up to ten and shapes such as triangles, squares and other geometrics.

In The Alphabet Set – all the letters of the alphabet are presented with a picture and letter and word.

My Paint – paint program for kids and My Paint data disks – available from Prism computer products.

For children from 1 year to 100 years.

M.W.

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POOLSMASER

(Formerly Pools Predictor) by Conway Computer Systems
 The Computer Football Pools Predictor

The amazing POOLSMASER program is by far the best Pools Predictor we have ever seen. In just 10 weeks of trying this program ourselves, we won no less than 12 dividends, the largest being nearly £300. Mr F. C. Hammond from Essex won nearly £10,000.00 in just 16 weeks. In his own words 'It's a licence to print money! POOLSMASER is simple to use and requires only that you keep the league tables up to date using your usual newspaper.

The result of many years research into the Football Pools by the programmer Martin Evans of C.C.S., the program is a masterpiece of expertise, and is simplicity itself to use.

- Predicts Homes, Aways and Draws
- No fiddly typing in of teams names etc and no redundant databases.
- Instant read-out or Hardcopy if you have a printer.
- Uses scientific formula based on recent form home and away, league position, goals scored etc. It has long been realised that certain combinations of these factors return a much higher than average of draws than the laws of average would expect. POOLSMASER looks for these factors and analyses their significance to give you the best possible chance of a win.
- Also has a 'Sequence Predictor' option. Many people believe that certain numbers on the coupon come up more often than others, and over a season patterns do seem to develop. The program analyses these patterns and predicts the numbers most likely to come up next. Certainly more scientific than sticking a pin in, or family birthdays etc.

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THE GRAPHOLOGIST

This program is a must for anyone interested in analysing their handwriting, or analysing other peoples. It is also very useful for analysing prospective employees handwriting. To use the program, a sample of handwriting is obtained, preferably in ink. From the main menu of the program you will be prompted and guided to examine each detail of the sample. You will then be taken through deeper and deeper sets of sub menus, all prompting you for relevant details of the writing, and the points to watch for, and add to the file if applicable.

Upon completion you are left with a disk file up to 15 pages long (depending on the depth of detail you choose), this file can then be edited within your word processor to produce a full report for the writer.

Fully experienced Graphologists can charge almost what they like for a full analysis, so this could prove a very lucrative business venture for you.

We must however stress, that unless you are experienced in graphology, then we can in no way guarantee the accuracy of the information that the program provides. If you are an enthusiastic amateur or just curious, then this program could provide hours of entertainment, whilst teaching you the finer art of this fascinating subject.

The text within THE GRAPHOLOGIST was researched and written by a top London graphologist/criminologist James Woodward. The software was written by Martin Evans our consultant software writer.

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BLITZ BASIC

Total control over your Amiga with not a ViewPort in sight?

The Amiga is one of the most powerful micros on the market today, equipped with some amazing sound and graphics hardware as is evidenced by the quality of the software which drives it. However, most of this power is unavailable to BASIC programmers and the only way to get to grips with the machine's potential is to learn either C, Modula-2, or assembler, a process which is time-consuming, expensive and not exactly a cinch to understand. AmigaBASIC, supplied on the Extras disk, is comprehensive and pushes the language nearly to its limit, but the only trouble is the speed – it is embarrassingly slow considering the Amiga's legendary processing power, almost needing a 33 MHz 68030 to use the editor alone. Part of the reason for this is the very nature of interpreted language having to be "translated", as the program is running, into something more machine-orientated. Compilers are the next step, performing this before run time.

There are a few BASIC compilers on the market which will translate the code into a more optimised form, and the speed increases are very welcome, but the constraints of AmigaBASIC still apply, and there is virtually no facility to take full advantage of the Amiga's custom chips. The program under scrutiny, Blitz Basic, addresses the problem even further, providing a totally new implementation of the BASIC language which is tailored especially for the Amiga and its juicy hardware. It is worth emphasizing at this stage that Blitz Basic will not compile your existing AmigaBASIC code, unlike the Hisoft BASIC compiler which will cope with most things. In fact, Blitz Basic does not even attempt to integrate with the Amiga's vast operating system in the slightest: running a program will shut down multi-tasking completely and this was quite worrying at first, but on quitting, everything seems to reappear none the worse for this indignity. The Intuition environment, familiar to Amiga users, is not present under Blitz Basic at all, so there are no windows or menus, but the mouse and pointer are supported.

You may be getting an inkling that Blitz Basic is going to be games-orientated, and having said what it does not

'dual-playfield demo of B L I T Z B A S I C

SCREEN 0,640,200,3 'note 640 by 200 is not resolution, its size
SCREEN 1,320,200,3 ' similar to BASIC but not identical

'now, turn on a dual-playfield DISPLAY

DISPLAY 320,200,0,1,1,0,1

'draw something TO the background SCREEN (AND SHOW it)

USESCREEN1

SHOWB 1,0,0 'SHOWB means post up the background screen
FOR a=10 TO 310 STEP 20

LINE 0,199,a,0,1 'draws a pretty pattern

LINE 0,0,a,199,1

LINE 319,199,a,0,1

LINE 319,0,a,199,1

NEXT

'now, something for the fore-ground SCREEN

USE SCREEN 0

LOCATE 0,0

PRINT "Ta-a!, this is a dual-playfield display. I hope you like it."

a=10 To 80 STEP 5

CIRCLE 159,99,a,3

NEXT

main

VWAIT

SHOWF 0,MOUSEX,0 ' moves the front screen around with the rmouse
movements

IF JOYB(0)> 0 THEN END

GOTO main

Fig. 1 This is what a Blitz Basic Program looks like

do, the rest of this review will concentrate on its many attributes. Tony Horgan took a look at AMOS a couple of months back, and it seems these two products are very similar in their approach. The demos for Blitz Basic are very impressive indeed; they managed to write a very convincing two-player version of the classic Defender which scrolls smoothly and plays at a very respectable speed. The rotating balls of another demo are familiar to followers of

the various hackers around, and again the animation is excellent.

The Manual

Any program like this must have high quality documentation and Blitz Basic is supplied with a comprehensive manual which is not afraid to catalogue the program's limitations, as well as emphasise the advantages. Each com-

mand is fully explained and there is an introductory section on the BASIC language for the uninitiated. There are plenty of examples on the two disks which illustrate the more complex aspects of Blitz Basic's control of graphics. An index would have finished it off nicely, but the contents pages have the right kind of information to get you going.

The Language

Although a few short cuts have been made, Blitz Basic is a fairly comprehensive version with all the usual features like multiple statement lines and subroutines. It follows AmigaBASIC to a certain extent, not using line numbers but preferring alphanumeric labels, where necessary. Program control statements are adequate, with FOR...NEXT loops, IF...THEN, and WHILE equivalents. The maths format is fast, but slightly limited in that numbers range between 132768 (to four decimal places), and some strategic mathematical functions, but this should be sufficient for most games writers. I/O is augmented by a number of specific commands to load in IFF files for sprites, screens, sounds and

"The demos for Blitz Basic are very impressive indeed; they managed to write a very convincing two-player version of the classic Defender which scrolls smoothly and plays at a very respectable speed"

even fonts (although you are limited to 8x8 characters drawn on a DPaint screen), but more on these later. Other BASIC niceties such as arrays and string handling functions will make even the relatively inexperienced programmer feel instantly at home with the language.

Building a display was always a tedious process in any language, but Blitz Basic goes a long way to simplifying the operation without having to suss out all those ViewPorts and other confusing system datastructures. Not content with a 320x200 32-colour screen, Blitz allows you easy access to the wonders of dual-playfields, hold-and-modify, and extra half-brite modes. Colour control and drawing routines supplement these, so drawing things is child's play.

Blitz really goes for the jugular when it comes to animation, giving you the option of using the hardware sprites or its own BLITs, also known as BOBs in Amiga circles. The mechanics of moving these around and detecting collisions are neces-

sarily complicated, but needless to say Blitz Basic comes with a variety of functions to simplify the job as much as possible, without sacrificing power. A QUEUE command instructs Blitz to remember where the BLITs are located so you don't have to worry about erasing objects before moving them. Control at a level even closer to the hardware is possible with commands like BMODE which dictate how and when the blitter chip does its thing.

SLICES are a very nice means of splitting up the display into regions which may have very different display characteristics, rather like raster interrupts on the old C64. The Amiga has a coprocessor (the COPPER) to do this for you and Blitz takes the grind out of generating the fairly complicated instructions for this chip. To fully utilize this feature, you must be able to synchronise changes to the display with the position of the raster beam drawing it, and the VBLANK, VWAIT and DMA commands enable this. Smooth flicker-free graphics are therefore assured.

Sound is another of the Amiga's strong points and Blitz Basic will happily play samples and also music files generated with its own editor program. It's a pity that the standard SMUS or Sonix files are not supported especially as the editor (Maestro) is pretty ineffective. Written in Blitz Basic, it highlights a major limitation of the system in that Intuition and AmigaDOS are absent, meaning you have no way of reading directories of filenames into the program to select files to load. This kind of I/O went out with the ZX80 and is really unacceptable on a machine like the Amiga with its filing system. A few "special effects" functions like VIBRATO and BEND add a bit of variation to the sample as it is playing.

The miscellaneous commands are interesting, with functions to read the mouse or joysticks, colour registers, loading and calling assembler routines and so on.

Error handling is important in debugging, and again Blitz scores well in this department, with a set of error conditions and trapping procedure for the familiar "Subscript out of Range" type of problem to Blitz-specific conditions like "VBLANK routine too slow".

The Editor

The Blitz Basic environment is essentially a single program allowing the edit-compile-run-wonder why it didn't work-start again-cycle to occur quickly with the minimum of fuss. The program is happy to read AmigaDOS text files so you could stick with your favourite editor, but there seems little point as Blitz is quite adequate for most purposes, running under Intuition. Compilation is very quick indeed as there is no recourse to disk-based libraries so most programs will compile in a matter of seconds. The code generated is quite concise; the main Defender program is about 85K plus all the data files

from 28K of source. Various options allow you to optimise the code for speed, mainly by taking out error checking and other debugging aids. Workbench-ready files are generated and there is also the option to make an autoboot disk to be really professional. One caveat here is that Blitz didn't like loading its programs from my hard disk and kept crashing the system. I suspect this is because of their weird load routines designed for floppies but the problem is alleviated by loading the directory into the RAM disk before running the program, an easy procedure under Workbench, if a little unnecessary. Note that you do not have to use the Blitz Basic compiler to run its programs: they

"Other BASIC niceties such as arrays and string handling functions will make even the relatively inexperienced programmer feel instantly at home with the language"

are entirely free-standing and so you can give copies away to your friends to show them what they are missing.

Conclusion

Would I use Blitz Basic? The answer is an unqualified "maybe"! There are a number of limitations which, in all fairness, MAST themselves point out and the openness of this information in the manual is welcome. Competent BASIC programmers who wish to get more out of their Amiga without the hassle of Assembler or C are going to find Blitz very useful indeed. I think it makes a good stepping stone to bridge the appreciable gap between the powerful, but slow, AmigaBASIC and the "professional" languages previously mentioned. Developers of games and other applications will be able to use Blitz to just try out new ideas, safe in the knowledge that their code is easy to write, but not too distant from the rules of the operating system to make porting it to C or Assembler awkward. Finally, I hope we see a lot of programs written in Blitz Basic in the public domain libraries, if not in the games charts, as I am convinced the potential is there for some quality stuff.

M.N.

Price: About £50.

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MOUSE ATTACK!

Golden Image have added to the surplus of Amiga mice. But, Pat Kelly asks, are they better than the original Amiga mouse?

The mouse has been underestimated by a lot of computer users. Why? Because like the keyboard it is an integral part of the Amiga interface between microprocessor and computer user. Many users prefer to use the CLI rather than the workbench for the simple reason that they regard controlling the mouse rather than being a pleasure, a chore.

In serious applications such as Desk Top Publishing, Computer Art, Wordprocessing, Spreadsheets, etc., etc., the more at ease the user feels with the tools, the more productive and less stressful they become. This does not only mean that a good applications package is needed, a good interface tool is also required, be it a mouse, lightpen, trackerball, or keyboard.

"Even games can be greatly enhanced, in playability, with a superior mouse"

Sadly, the Amiga's standard mouse isn't up to the job of providing a professional service to the user. Even games can be greatly enhanced, in playability, with a superior mouse. But, are all replacement mice superior? Many will have you believe that a different mouse is superior to the original just because it features an extra button, a higher resolution, technological advances, and a host of other impressive specifications.

Golden Image have two mice in their product line up. The lower specification mouse is the GI-500C opto-mechanical mouse. So what is an opto-mechanical mouse? It is a mouse which operates using both optical and mechanical encoding of mouse movement. The mechanical part, in this case is the Mouse ball and tracking rollers, a standard feature. The optical decoding is a feature within the mouse casing which uses the mechanical rollers to turn two circular wheels, one for x-direction, the other for y-direction. These wheels have small slits in them, through which light passes to a light detector thus creating an electronic pulse. The frequency of the pulse determines the speed of the mouse movement. This, again, is a



standard feature of any normal mouse so maybe Golden Image are trying to dazzle users with technological terminology.

The GI-500C is a neat performer. It is supplied with a small mouse mat, but because its resolution is an impressive 290 dpi, one of the best there is, it does not require a large travel area. It sports two micro-switch mouse buttons which are very responsive at the slightest pressure.

The casing, however, has a cheap "plasticity" look and feel with a high back, i.e. high from the desk causing the hand to be raised and arched. This may not be a discomfort to most as it all depends on how you normally hold it!

The GI-6000 is the senior of the two mice, and it also has the same high-backed design. This mouse is an optical mouse, but unlike last month's reviewed 'Cordless Mouse' it is not cordless, but ball-less.

"The optical mouse glides across a special 'gridded' mouse mat at 250 dpi, using three light sensors to create x-axis and y-axis movement pulses"

The optical mouse glides across a special 'gridded' mouse mat at 250 dpi, using three light sensors to create x-axis and y-axis movement pulses. This reduces the need for the moving parts associated with standard mice i.e. mouse ball, rollers, and wheel mechanisms. If a mouse becomes faulty it is usually due to a mechanical component becoming jailing due to dirt

clogs, or to wear. This can not happen with the optical mouse, the unit is totally enclosed with no moving parts.

This design allows the mouse to be very lightweight, at 85g it is half the weight of a conventional rodent. This is not necessarily good as further pressure maybe required to hold the mouse down while gliding across the special mat. The mat is a little too cheap and cheerful to be considered as a sturdy and reliable part of the equipment, and it may mean that replacement mats could be required if care is not taken with the original.

"This may not be a discomfort to most as it all depends on how you normally hold it!"

The cheaper GI-500 with its high resolution has to be a nice mouse for the low price and certainly beats the standard Amiga mouse in performance, but I am unsure whether the optical GI-6000 has the same appeal and its performance is marred by its lightweight, and it is twice the cost of its little brother.

P.K.

Prices:

GI-500C: £26.00

GI-6000: £56.03

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How To Be A

More techniques for the computer artist are revealed by Peter Lee in the second of his series, which focuses on text effects and surfaces.

Part II

Computer graphics is one of the newest art forms, and yet one of the easiest to master.

A surprising statement? Well, every other form of graphic artistry requires much more devotion to style and technique – in the case of pencil sketches the weight of the line is all-important, while in watercolours the subtle wash of colour on colour has to be learned.

In the case of Amiga art the technique has a great deal of technicality about it, and, although gripping the mouse can be as interactive as shaking a dead man's hand for all the feedback you get from it, it is a marvellous drawing tool, once you are used to it.

The benefit of computer art is that no matter how many errors you make on the way to the finished work, you can always try something different to improve things. 'UNDO' is a tool Leonardo daVinci would have loved. . .

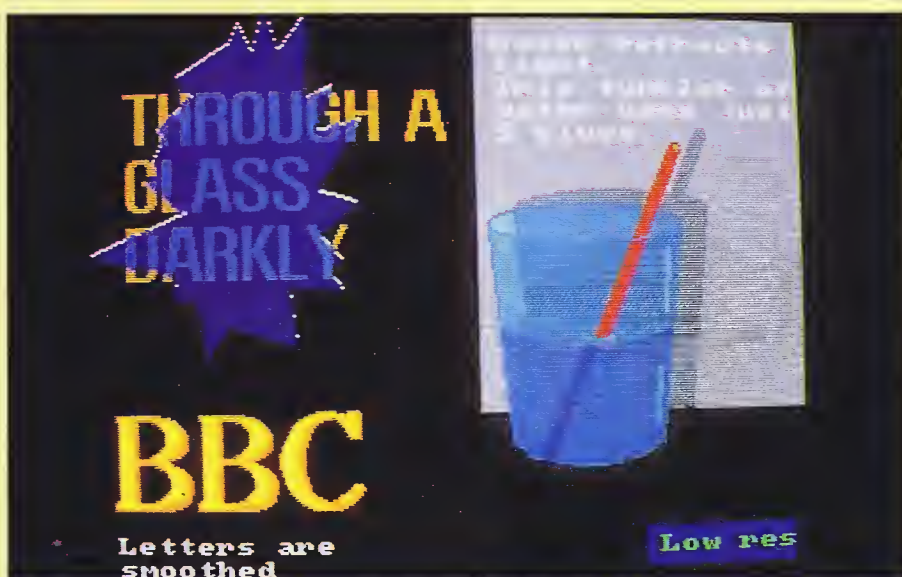
Simple things first: I would recommend the purchase of a mouse mat to make control easier – mice rollers are sensitive and can kick up unexpectedly on a solid, uncushioned surface. Use your workbench preferences settings to ensure your cursor can cover the whole width of your screen with a sweep across the mat. Another tip I would offer is to use one of the software utilities such as sunMouse or Dmouse which speed up response of the pointer quite effectively (though adjust the setting to avoid having too fast a response, which can lead to drawing problems). This gives a more natural flow to mouse control.

In the main this article will be referring to work done in DeluxePaint III – though most of the tools discussed are generally standard fare for most art packages.

TEXT

A good choice of font can make or break your efforts. There are some wonderful fonts available on the Amiga, and I would suggest a font disk or two as a prime investment, because those that accompany the computer are poor, sickly things for impact and range.

Display and enhancement of text is one of the big attributes of computer art. Rather



than being viewed as a typewriter, the computer screen can be seen as a poster – an attraction to hold the interest and pass on information.

It may be a title screen for a slideshow you have strung together, or the basis for a menu choice. Either way, just plonking

the bald text on screen is going to be deadly boring. A number of techniques exist for emphasising text: here's how to achieve them.

SHADOW – Simply a matter of cutting out your text, stamping it down on the screen in a dark colour, then overlaying



Amiga Artist

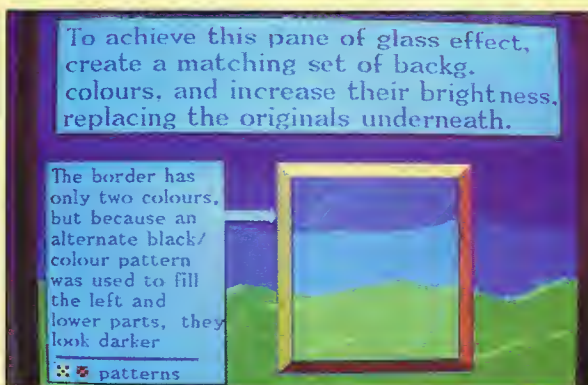


your original text brush. For best results your shadow colour should be a darker variation of your background colour (so obviously this will not work on a black background!). There are two ways to achieve this effect in DPIII - make your background colour the shadow colour and use the right mouse button to stamp down the brush, or use the F2 key to select the colour option, and choose the shadow colour from the palette menu before placing it on screen. You can now revert to your original brush colour with a press of F1.

If you ARE on a black background, then using this technique will allow you to create text with the appearance of depth.

A DROP-SHADOW is almost identical, except that the text is moved further away from the shadow image, to give a greater impression of height above the background surface. To enhance this effect, it is possible to use DPIII's smooth function to blur slightly the shadow's edges, giving a softer, more natural diffusion to the shadow.

BAS RELIEF text is slightly harder to achieve, but gives a good impression of raised lettering, pressed from the back-



ground. Having cut your text, you need to select a lighter variation of the background colour and stamp it onto the background (image A). Then pick a slightly darker form of the background colour, and stamp this (image B) to the left, and a pixel down from the image you have just created. Now select your background colour, and position the text brush so that only the right and left highlights of

the AB image are visible (your brush will be hiding the rest), and stamp it down.

NEON or glowing effects around text (or any brush) are achieved by firstly defining a range of colours (6 is usually sufficient). Then having cut out your text, using DPIII's outline function (the letter o), and working from the lightest of the range

Continued on page 37



No mess! Lots of fun . . . and educational too!

'Brilliant!' is the verdict of our youngest reviewer ever on MY PAINT in this month's issue of AUI.

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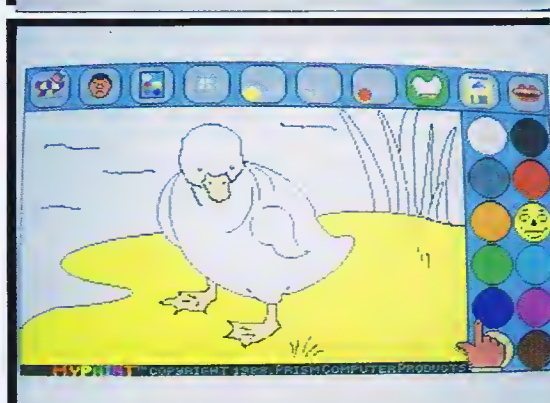
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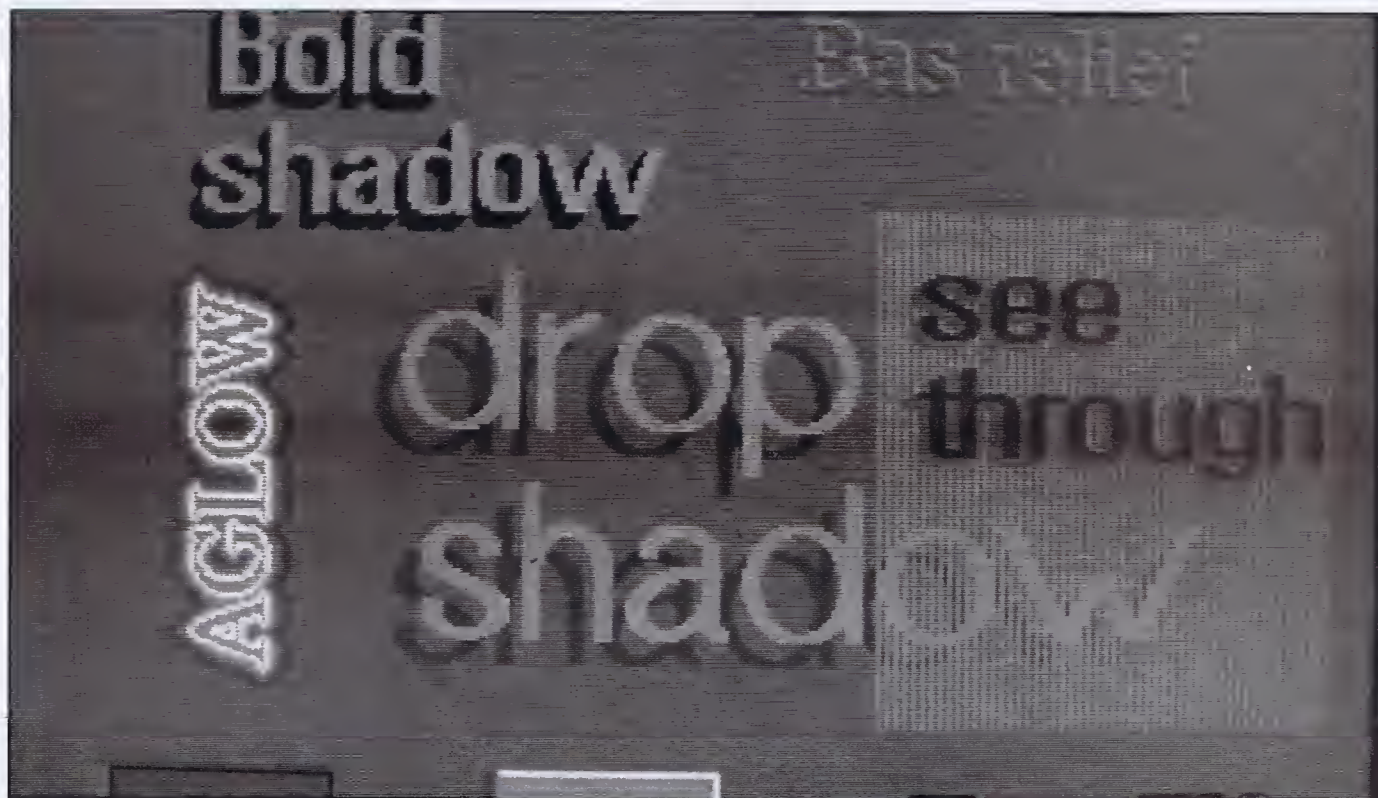
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If you do not wish to cut your Amiga User International, a photocopy of this page will suffice.





Continued from page 35.

of colours to the darkest, you outline the brush six times, which will give the appearance of a fading light source. Blue is an excellent colour to use, though red and green are also potent.

METALLIC text, especially gold, is a favourite, and is achieved quickly by defining a range of yellow-browns, and using these as the basis for a dithered fill, each letter being filled separately. Cut out the resulting text, select F1 from the keyboard to enter matte mode, and use the shape of the brush together with the smooth function to blend the pigments inside the filled text together, smoothing out any coarseness.

If you now need to add a little emphasis, select the lightest shade of your golden range, and as with the drop shadow, cut the text, select F2, and stamp the text on screen, press F1, then offset and stamp your text brush a pixel or two so that one or more edges have a gleam to stimulate depth.

TEXTURES AND MATERIALS

Of all the textures, **GLASS**, for obvious reasons, presents people with most problems. How do you show something is there when you can see through it? In the case of windows, the technique I adopt is to glaze the window last.

Draw your back ground, and only then put in the outline frame (in this case a frame can equally well be a car wind-screen, a window in a home or merely a pair of spectacles).

You should now be able to see your

background through the frame. There are two paths to follow now – an easy, and a hard. The easy one requires you to see which colours are visible through the frame, duplicate these in your palette (forward planning is clearly needed), then increase the brightness of these duplicates by a setting or two. Now replace the old colours in the frame with the new, lighter ones. You should then add one or two light streaks across the 'surface' of the glass to simulate a reflection, and to prove to the mind's eye there really IS something there.

The more difficult alternative is to mix duplicates of your background colours with various proportions of blue. While this may give more natural effects, I find it too time consuming over a range of colours.

In the case of a tumbler of water, you have to adjust your perception of the object and imagine it as boundaries of colour (usually tones of blue), dark for the liquid and light for the glass. Then added complication of glass seen through glass is overcome easily by choosing a darker shade of blue wherever glass can be seen through itself.

An object in the glass will be subject to refraction – an apparent displacement of its true position, and where it enters the water, a few semi-circular rings of a light blue add to the impression.

GRASS can be quickly sprayed onto the screen using the airbrush at its smallest setting, mixing up to three shades of green, with a smattering of yellow dashed over it to give the impression of flowers.

SMOKE can sometimes present difficulties, though the standard way I use is to define a range of up to six greys, set the

mode to cycle, and using a round brush just move over the screen in small circular motions. This looks nothing like smoke – until you then use the Shadow function on the image, alternatively pressing the left and right buttons to delicately shade in the greys, before returning to the faithful Smooth function to blur the outlines.

WOOD, it should be remembered, has a surface texture which is affected by the direction of light. In drawing the grain, use two colours onto the base tone – one as a highlight, the other as the shadow.

Its very colour gives **STONE** a hard feeling, and rather than simply cycle a series of greys over the surface using the spray tool, I find it better to soften the texture afterwards using the smooth function. And remember, once you have defined one stone, use it repeatedly to build up your structure – always remembering to flip it horizontally from time to time to avoid an obvious repetition in the pattern of the stones.

LIGHTNING is achieved in much the same way as the glowing text: draw the fork in a light blue, cut out the shape as a brush, then using a subtle range of up to four darkening blues, outline the brush successively. **FLAMES** can be simulated in a similar way, using a basic orange colour, and adding layers which get progressively redder.

NEXT TIME - I'll take a look at some other materials together with an introduction to easily achievable DeluxePaintIII animation techniques to give you the kind of special effects which rival some professional packages.

P.L.

Two Way Television

John Kennedy details a leading-edge development in communications. Will your Amiga replace the common telephone?

Domestic two-way television (2WTV) has long been the ultimate telecommunications dream of science fiction writers. Ever since the standard telephone was introduced it seemed only a matter of a few years 2WTV before would follow, just as TV had followed radio.

Alas, it was not to be. Sending speech down a wire by varying an analogue property such as voltage or current is a relatively simple process. Sending pictures in the same way was not quite so simple. A moving image requires many times as much data to transmit. Its bandwidth - as information engineers like to call it - could not be supported by a network designed to carry speech. Consider the length of time it takes to transmit a photograph via a Fax machine: Not really up to Disney animation standards.

Does this mean that 2WTV is an impossible dream? After all, it seems as though physics has conspired against us from the start. Well, take a deep breath: I have a 2WTV system running on my Amiga. How does it work? Well, let's start at the beginning.

A novel approach to sending images would be an adaptation of the mechanical scanning disk system used by John Logie Baird's first attempts at television.

Baird's system worked by using a rotating disk with a series of holes drilled in it. The holes were arranged so that they 'scanned' an image projected on to it many times a second. A light sensitive device placed behind the disk reacted to the pulses and sent a signal to the receiving system. The receiver had a synchronized spinning disk placed in front of a light source which was controlled by pulses from the transmitter. The light shone through the holes in the disk and re-created the image.

This ingenious hybrid of analogue and digital systems was capable of some very worthwhile results. They may have been a

far cry from the HDTV of tomorrow, but they required a remarkably small amount of data to be transmitted. Building a video recorder from such a device could have easily been achieved by adapting a small personal stereo cassette player (had they existed at the time). Transmitting such a signal down a telephone wire would be entirely possible, as the bandwidth has been reduced by deducing a very important part of the signal (time) individually at both ends of the circuit.

In fact, considering the simplicity of the system, you may be tempted to have a bash at re-developing it. Using a photo-sensitive transistor and some Light Emitting Diodes, the results should be very interesting. Taking the system one step further, colour may even be possible by using the tri-colour LEDs now widely available. Fancy building yourself a closed circuit television service for less than a fiver? Come back Mr Baird, all is forgiven...

However, the Mr Baird's system is not the one which has had vast amounts of R&D cash pumped into it in an effort to bring 2WTV to the masses. The big electronic corporations want something a bit more modern. A bit more expensive. The analogue process is out, and digital in.

Does this mean that there is no place for the home experimenter any more? Not a bit of it. Thankfully, current computer technology is available to the mass market at a very reasonable price. All you need is a bit of imagination and ingenuity and you could beat the mega-corps at their own game. Well, perhaps.

The computer set-up I use is an Amiga. I use it because I have one, I like them and they are (relatively) easy to program in a wide variety of languages. I try to use C wherever possible as it seems to provide the best development time : execution time ratio. Why don't I use C++?

Good question.

To obtain the digital images I cheat and

use a video digitiser called VIDI from the Scottish company Rombo Productions. VIDI has been around for several years now, and is fast, cheap and cheerful: perfect for the inventor on a tight budget, or poor science student cum freelance journalist.

VIDI is a frame grabber, in that it can capture a video frame in real time. It then holds it in its internal memory before downloading it to the host computer. The Amiga version operates with a resolution of 320 by 256 pixels in sixteen shades of grey - more than adequate.

Obviously for true 2WTV each computer system must be equipped with a VIDI digitiser and a suitable video source (such as a black and white second-hand CCTV camera). For 2WTV over distances greater than across the living room with a stretched serial cable, a pair of MODEMs is also required, the faster the better.

Programming a 2WTV system is an interesting challenge. The techniques I've used form a perfect blue-print for a machine code fanatic to hack them into a much faster and slicker system. Maybe, there will soon arise a proper IFF standard to allow images to be swapped between systems. Imagine a face-to-face conversation with a fellow Amiga hacker in America!

2WTV Overview Video image grabbed
Video image placed in Amiga memory
Video image reduced to a 64 * 64 bit array
A delta bit array detailing the bits which
have changed is created
The delta array is run-length compressed
The compressed data is transmitted

MODEM



MODEM

The data is uncompressed
Delta data combined with existing data to
produce screen array
Array displayed on-screen

The quality of the video display in my system is a little disappointing. To make things as simple as possible, I decided upon a 64 by 64 pixel, one colour image: Definitely not up to the Amiga's usual standard. However, the resolution is adequate to transmit someone's face, especially when the image is moving.

The most interesting challenge was to minimise the amount of data transmitted with each frame. Consider a situation where no compression is used. A 64 by 64 pixel display takes 512 bytes. A MODEM operating at 2400 baud (a slow albeit affordable speed) would take at least 1.7 seconds to transmit it. A new video frame every two seconds is not acceptably fast.

By delta-encoding the array, we obtain only the bits which have changed since the last frame. In a good real-world case such as a human face, one hopes there will be very few changes. Perhaps the eyes will have moved, the mouth changed shape: in other words only a minimal change from one frame to the next.

The delta array is therefore an ideal candidate for run-length encoding, since it consists of a few binary bits followed by a long sequence of nothing, then another bit or two, then a sequence of nothing and so on.

The delta array is also a 'sparse array': Only a few elements in it are used. You might think that sending only a list of these changed bits would be a better idea, but experiments have shown that the data needed to describe each bit's position is in itself greater than sending the entire array. For example, in our example the array is a 64 by 64 grid. Therefore each element needs an 'address' or pair of co-ordinates which can reference from 0 to 63. These take 7 bits each or 14 in total. If only one or two bits were changing, this would definitely be a good technique. Unfortunately for us, too many bits are changing state to make this approach workable.

Typically the run length encoded delta array is only about 100 bytes long. This means that we potentially have a system running at three frames a second: A big improvement. Of course, this does not take into account the processing time needed to create the compressed data, nor the fact that the 'other system' will be transmitting its own data.

Drawbacks

The main bottleneck is the speed of the MODEM. Of course, you can buy MODEMs which will fairly rocket along, especially when MNP systems with built-in compression techniques take over. However, these MODEMs are beyond the reach of most users. Or at least, beyond my reach. Besides, I've always found it's good practice to make a system as tight and as neat as possible.

The other important consideration is

detail, or screen resolution and screen depth. If you increase the detail, you increase the amount of data that must be transmitted and therefore you slow everything down. Adapting my system to provide 4 colour grey-scale would (at least) halve the speed of update. Adapting it to use the entire screen instead of a small window could slow it down twenty times!

The best 2WTV system would be as intelligent as possible, constantly varying the detail transmitted depending on the image. The HDTV system uses this idea, and divides the screen into portions. Only the portions which have changed are transmitted.

Anyway, with processors as powerful as the 680x0 family, and megabytes of RAM to play with this is an interesting (and solvable) challenge for programmers everywhere.

A slight flaw in my 2WTV system: It transmits pictures only, no sound. Sending digital sound down the line is a completely different project. Has anyone looked at it?

Applications

An application which I particularly like the look of is 2WTV for the deaf. A recent system shown on Tomorrow's World was impressive, but the presenters did not mention the price.

It worked by performing a line-detection function on the image before transmitting. As sign language needs outlines more than detail, this automatically means that

the information transmitted with each frame is reduced. Cunning.

Other applications? Well, how does a image-based BBS grab you? Log-on, have a chat with some friends. Perhaps watch a short cartoon. The possibilities are endless. Phone bills are going to be strained!

Some programming examples of the tricky bits

Listing 1 - Accessing the VIDI library.

The VIDI library contains the code necessary to access the hardware, and also one or two use Intuition routines. If you want a copy, get in contact with Rombo and ask for Keith. He's a dead-on type whom I'm sure will be pleased with your interest. Say hello to Verona whilst you're at it.

Listing 2 - Create delta array

The program uses three arrays to hold the image: Old, New and Delta. By comparing the New and Old arrays, the changes can be detailed and the Delta array produced. The simplest way to do this is to use the Exclusive Or function.

Listing 3 - Encoding a delta array

This is a bummer of a thing to code, and could benefit from a re-write or two. The Delta array is reduced in size by using a 'run-length' method. Each first bit of each delta array byte contains a pixel state, and the remaining seven bits contain the length of its run. Experiments have shown that using 6 bits to store the length would improve the system. Output_array is the encode array, ready to transmit. Out_count holds the number of elements in it.

listing 1

```
#include "vidi_lib.h"

struct VidiBase *VidiBase;
VidiBase=(struct VidiBase *) OpenLibrary ("vidi.library",0);

/* Check for video signal */

if (SyncTest()==VIDI_NO_SYNC) {
    printf("No video signal present- quitting\n");
    exit(0);
}
else
    printf("Video signal present\n");
```

listing 2

```
/* Create Delta array */
/* using the eXclusive OR function (^) */

for (count=0;count<512;count++) {
    delta_array[count]=old_array[count]^new_array[count];
    old_array[count]=new_array[count];
}
```


Listing 4 - Transmitting the data

This code has been lifted almost directly from the Rom Kernal Manuals. See them for more detail.

Improvements and Conclusion

Any improvements would consist of

minimising the drawbacks detailed earlier by re-writing the program in machine code. With the system running as fast as possible, extra detail can be incorporated into the images.

The next step is to use faster MODEMS and faster frame grabbers. If these steps are taken, maybe even colour images could be introduced.

In conclusion, with equipment that a surprisingly large number of home users already own, 2WTV systems could soon rival Bulletin Boards for high telephone bills.

If you are developing such a system, get in touch with AUI. What better place is there to provide a forum for Amiga enthusiasts?

J.K.

listing 3

```
encode() /* Run Length Encode delta array */
{
    UBYTE in1,in2,ct;
    USHORT total;

    out_count=0;
    in1=read_array(0);
    ct=1;
    for (total=0;total<=4095;total++) {
        in2=read_array(total);
        if (in1==in2) ct++;
        if ((in1!=in2) || (ct==127)) {
            output_array[out_count]=((in1<<7)+ct);
            out_count++;
            in1=in2;
            ct=1;
        }
    }
    output_array[out_count]=((in1<<7)+ct);
    out_count++;
}
```

listing 4

```
/* Send encoded data to serial port */

if (repeat==HALT_TRANSFER) {
    SerialIO->IOSer.io_Command = CMD_WRITE;
    SerialIO->IOSer.io_Length = 2;
    SerialIO->IOSer.io_Data = (APTR)&repeat;
    DoIO(SerialIO);
}
else {
    SerialIO->IOSer.io_Command = CMD_WRITE;
    SerialIO->IOSer.io_Length = 2;
    SerialIO->IOSer.io_Data = (APTR)&out_count;
    DoIO(SerialIO);
    SerialIO->IOSer.io_Command = CMD_WRITE;
    SerialIO->IOSer.io_Length = out_count;
    SerialIO->IOSer.io_Data = (APTR)&output_array[0];
    DoIO(SerialIO);
}
```

HARD COPY

GREAT IDEAS IN COMPUTER SCIENCE

Alan W. Bierman (The MIT Press £40.50 Cloth, £18.95 Paperback)

Alan W. Bierman is Professor of Computer Science at Duke University in the USA and, in 1985, he was asked to create a computer course for liberal arts students. 'Great Ideas In Computer Science' is a by-product of that course.

It is written in a surprisingly non-professional and conversational style and, because of the way each chapter is labelled, either 'A', 'B' or 'C', although it is almost 450 pages long, not all of them have to be read to understand the contents.

'A' denotes introductory chapters which make few demands on the reader although giving an overall insight into the whole. 'B' sections are the primary material of the book, they are more specialised and demand more effort to read and understand fully, while the 'C' material answers potential questions and summarises the preceding information.

So what are the 'great ideas'?

They are, as the author states, the intellectual achievements in the field and include programming languages, algorithms, software methodology, AI (Artificial Intelligence) and robotics, to name but a few. He goes into all these, and more, in depth and helps in the understanding of each

one by giving exercises, (so sitting with a PC to hand is useful while you are reading this book), which not only aid in comprehension of the information but, by using a 'hands-on' tutorial, teach in a literal way. Bierman's approach is novel to say the least. To start the novice on the programming language Pascal he uses Decision Trees — which can not only help in classifying objects, interviewing people and game-playing but give an insight into how comparatively easy it can be to learn to program. On page 7 there is even a small, very small, but useful, introductory program that the reader can use for a practice run.

I must confess that I always thought an algorithm had something to do with mathematics, but Bierman gives a different definition. He says it can also be a method, procedure, or recipe for doing a job. And who am I to argue with the learned Prof? Especially when he illustrates his interpretation with the appropriate recipes for programs, which undoubtedly prove his assertion.

All the chapters are liberally illustrated with line drawings in addition to the text. And the summaries at the end of each section

are a useful guide to what has gone before, and can be glanced at first to help you decide if you want to read that part or not. Don't let the section headings put you off. Riffing through the pages before getting down to the actual reading I saw 'Numerical Computation and a Study of Functions', 'Top-Down Programming', 'Connectionist Architecture' and 'Parallel Computation on a Saturated Machine' and my heart sank. But, once I'd begun to really read this book I was hooked, (O.K., O.K., so I did skip some of the 'optional' parts), and carried on to the end.

For those who would like to go on to the more esoteric stuff, the Professor gives a list of further reading material but I would think that the books he suggests would primarily be for computer study students rather than the general reader. Still 'Great Ideas In Computer Science' which, incidentally, is sub-titled 'A Gentle Introduction', is a good way to get started on understanding your PC Computer and how it works, what it can and cannot do and how, eventually, the new generation of computers will advance our knowledge of ourselves and the universe.

D.M.

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Improving on P.D.

This month Peter Wright gets down to business with P.D. spreadsheets, databases, and word processors

First, let us consider exactly what the above mentioned programs actually do. If you're new to computing then defining what they do may cause you more trouble than ordering a Big Mac in Mongolia!

Spreadsheets

A spreadsheet consists of horizontal lines ('rows') and vertical lines ('columns'). Where these intersect is a 'cell' and its address can be worked out from

"The whole spreadsheet may well be larger than the screen display, you scroll around it in much the same way as you scroll through a text file although, with a spreadsheet, you will also scroll from left to right as well."

which row/column it is sitting in. If you imagine a sheet of graph paper, then all the little squares are 'cells'. As the whole spreadsheet may well be

larger than the screen display, you scroll around it in much the same way as you scroll through a text file although, with a spreadsheet, you will also scroll from left to right as well.

A cell can contain three types of entry. The first is a 'label', ie, text which can be a heading for a row or column. For example, the name 'TOTAL:' next to a cell in the middle of the spreadsheet.

The second is a 'formula', i.e. the contents of that particular cell is calculated from the contents of other cells within the spreadsheet. For instance, a column might contain all the payments made during a week's trading. You would like to add up all of these, so you would enter a formula in a cell (probably underneath the aforementioned) something like @SUM(B2..B22) and, if you have entered the amounts in cells B2, B3, B4 etc up to B22 then the cell containing your formula will instantly add up and display the total for that particular 'range' of cells.

Spreadsheets work in memory

The more memory you have then the bigger the spreadsheet you can work on. Obviously, if you just want something to work out your current account at the bank then

you do not need a spread-sheet that can contain umpteen million cells! (Nor a memory the size of a planet!)

When you have finally got the spreadsheet set up you will doubtless want a hard copy (a print out) of it. As they are usually wider than a printer can cope with, they are printed out in strips which you then stick together to create your complete printed spreadsheet. (The two that I use, DigiCalc and Analyze! work like this).

So, what's available on PD? As usual I'll stick to Fish disks. (Although I'm sure there is someone out there saying "Oh there's a much better one on PlonkerVille Disk 3333!" - Tough!)

Well, to be honest, there is not that much available. What there is is something basic to something which is a real biggy.

(As B2B22 is known.)

Different spreadsheets require different syntax, i.e. the way it is written, but all follow the same general rules.

The third type of entry is 'data' which is simply the figures you enter and on which the spreadsheet works on.

Vc.....

.....on Fish 53, is a basic 'VisiCalc'-like spreadsheet that supports a maximum of 40 columns and 200 rows giving you upto 8000 cells. This is more than enough to get the hang of spreadsheets with. The program comes with brief but clear documentation and works from either the CLI or the Workbench. In an early program like this no use is made of the mouse or menus but you will find that when using a spreadsheet all you want to do is enter commands at the keyboard.

The only thing I didn't like about 'Vc' is that it defaults to the American keyboard and I found no way of getting a " sign. Direct printouts are not possible so you have to save the spreadsheet as a text file which you can then edit and print from. Apart from these two irritations I would recommend 'Vc' as a good starter to the fascinating world of spreadsheets.

Analyticalc.....

.....is big! In fact it is huge. This is at the other end of spreadsheets in that it will support, memory permitting, a maximum of 18,000 rows by 18,000 columns giving a cell total of well over 300 million!! The program is so big that, together with its documentation, source code etc, it is distributed in a compressed format using either ARC or ZOO. Read

"When something as POWERFUL as this is free then you can't really moan can you?"

the ReadMe files for instructions on how to decompress it.

This program is reputedly the most powerful spreadsheet available for the Amiga either on PD or commercially and, judging by the documentation, it must be! It is written in Fortran and, as the source code is supplied, you could alter it to your heart's content and even integrate it into your own programs. (On the condition, I suspect, that

you have a brain the size of a planet!).

To run it you will need over half a meg as the program alone needs 300k bytes of virtual memory. The number of commands, formula that can be entered, documents etc is mind boggling! When something as POWERFUL as this is free then you can't really moan can you? Check the Fish disks for the latest version. The one I tried was Version24-01A and came from Fish 328.

Not really spreadsheets but in the same vein are programs which have a general 'Account' flavour. These can help with your home accounts (cheque book), keeping track of your shares etc. Here are brief details of just a few.

Bankn.....

This is a program which records your cheque transactions on Version 1.5 is on Fish 163. Bankn is actually made up of seven programs all of which are supplied with detailed instructions. These documents can be accessed from within the programs themselves which is REALLY useful. It is an American program therefore you do not get a full sized screen but, as the program is SO good who cares? An excellent program that does exactly what it sets out to do.

Clerk.....

Version 3.1 is on an ICPUG disk (Business-3) but not on Fish (yet). Sorry! It is described as a "Small Business Program". It will deal with accounts payable, accounts receivable, general ledger etc. I found it rather fiddly to set up and, although it makes extensive use of menus, there is no file requester. Loading a file entails entering its name (together with its full path). It seems to be written in some sort of compiled basic (no source to check this) judging by the number of fatal errors it threw up when trying to get it going.

StockChart.....

Also know as Stock and also to be found on ICPUG-Business-3, this program performs technical analysis on stocks and shares. It is cute, menu-driven and comes complete with easy to understand documentation. If the 'market' is your scene then give it a bash!

Ledger.....

Again from ICPUG this one keeps a track of your bank accounts. It is easy to use, prints out statements and the supplied documentation is nice and concise. Simple and useful.

PennyWise.....

This is from Fish 272 and is a cash-book program for keeping track of all your home accounts. It is PAL so you get a full screen and it uses Intuition to the full. On screen help is an asset with any program and help files included with PennyWise are excellent. To browse through your previous transactions 'video recorder' buttons are used. (A la 'Superbase Personal'). To get you into the swing of things a good working example is included. User definable configurations can be loaded and, as a bonus, the wait pointer is cute! All in all an excellent program

Databases

And what is a database? Easy - put in as much information (data) as you like and pick out (using filters) just the information you want. Databases work by you defining 'fields' within a 'record'. The database consists of many records all containing the same pre-defined fields.

"The database consists of many records all containing the same pre-defined fields"

The GURU even paid a couple of visits! Not for me but could be handy should you have a use for it.

For instance, a database containing addresses would contain individual records, each containing a name and address plus whatever other details you want. Once the information has been entered for one record it is saved and you move on to the next record. An index is built up on one (or more) of the fields as you go.

On an address database you may well build the index on the Surnames field. The more fields in each record then, clearly, the more selective you can be when extracting records which fall within the parameters you define. With fields for age,

up whereby the album details are extracted from one file whilst track details for that album are drawn from another. The

prerequisite is that each file MUST contain common data in one of the fields. The catalogue number of the records would be a good example as this could be used in a field of both the Records and Tracks data-files.

Again, there are few 'real' database programs on PD but the star must be..

RIM.....

.....(Fish 143). This is a 'relational database' ('Relational Information Manager') by the same chap as Analyticalc (Glenn Everhart). The original program was written for mainframe computers at Boeing! Again, this program is 'ARced' to fit on a floppy and contains source code, manuals, documents etc etc. In fact, the manual runs to 16,000 words! However, it is VERY powerful and as the source code is also included (Fortran 77), the program can be integrated with other applications of your own.

All commands are typed in, there being no 'friendly Intuition interface' but, if you've a use for something so powerful, this is the 'bee's knees'! (Personally, I'll stick to Superbase.)

HyperBase.....

Version 1.6 of this is on Fish 131. It can be run from the CLI or Workbench and is a good, basic database program. Although it uses pull-down menus there is no file requester (a pity) so file names must be typed in: better keep them simple!

Documentation runs to about nine pages and is fairly explanatory. I found setting up a new file a bit long winded and in the end just edited one of the examples. This worked O.K. If you're after something simple but still fairly sophisticated then HyperBase can be recommended.

AmiDex.....

Not really a database but AmiDex (ICPUG-Business-3) is marvellous for

keeping track of all those names and addresses you keep losing. The card shaped window of AmiDex appears on the Workbench after starting it from either the CLI or its own icon. Pressing the buttons allows new entries, scrolling through existing records, printing out (with a great degree of control), outputting to a file (for editing and later inclusion with a Mail Merge utility) etc etc. As a Workbench based address book utility this takes some beating.

Word Processors

I suppose I had better define this now! You must have used 'Ed' by now if only to alter your startup-sequence. Ed is a text editor, albeit a very basic one. Use a better editor and you can keep banging in your text until it scrolls out of sight and into the far distance. The trouble is when

***"Use a better editor
and you can keep
banging in your text
until it scrolls out of
sight and into the far
distance"***

you come to print it out. An editor may be able to stop words at the end of a line being cut in half ('word-wrap') but how does it know where to allow for the pieces of paper on which you are printing? And what about bold or italic text? Headers (titles at the top of each page)? Footers (titles at the bottom)? Page numbers? Text justification? This is where a word processor differs from a text-editor.

Text editors are marvellous if you are into programming as they just create a continuous text file which is, after all, just what you want for source code. They offer editing ('Cut' and 'Paste' etc) and 'Search' and 'Replace' facilities plus many others. However, if you are writing a book or even a long letter then you want something that will allow for page breaks and, in the case of books especially, allow headers, footers and page numbering.

On Fish I have never encountered a true 'Word Processor' although

***"Records can easily
be extracted for
males aged 33 living
in Colchester and
driving Volkswagen
Polos"***

contents, selective or otherwise, of that database file.

I use Superbase Personal which is a 'Relational Database' which means that more than one data-file can be scanned for information (and output). An example would be where I had a file containing details of my L.P.s* and another containing all the tracks and times. A 'Query' (used to extract information) can be set

AmigaFox (Fish 315) is described as such.

AmigaFox.....

.....is a German program that is supplied with several versions for PAL or NTSC users and English or German speakers. The English manual is written in pidgin English and takes a fair bit of deciphering! It contains a file requester but will only allow access to df0:, df1: and dh0:. The program contains on screen help but is a bit buggy in places.

AmigaFox works like a normal text-editor using its own supplied font. Once you have entered all your text you must select 'Convert' from the menu and the text is then converted to a graphic format. This can then be incorporated with graphics which can themselves be imported into the graphics editor. Any graphics so imported are shaded into a black and white version of the original. Drawing tools are also provided in the editor.

Printing makes use of AmigaFox's own driver and only an Epson compatible one is supplied. One HUGE bug is that not all the keys type what is on them! Lower case letters are O.K. but capitals are all over the place. This is version 1 - pray to God that version 2 is an improvement! I would call it a 'poor man's ProWrite' but surely no-one is THAT poor? A program to avoid!

Really, that is about all I could find in the way of 'Word Processors' on Fish. All the rest are text editors although, with a bit of patience, these CAN be used as Word Processors. Just work out page breaks for yourself! I suppose we had better have a look at the pick of the editors then....

"He must be one of the most prolific software writers on Public Domain"

Dme...

'Dillon's MicroEmacs'. One of Matt Dillon's programs. He must be one of the most prolific software writers on Public Domain. This one comes with the usual REAMS of source code and as such, any of his programs are worth getting just to see how to program!

He must be one of the most prolific

software writers on Public Domain

This program uses no menus, no mouse and is NTSC screen only. However, it is quick - very quick. Dme is aimed, primarily, at programmers who want some-

thing that is FAST and whose functions can ALL be accessed from the keyboard. The trouble is that, for the likes of you and me, there are dozens and dozens of new keyboard commands to learn. Personally, I couldn't be bothered!

Jed.....

Jed, on Fish 297, is an editor that is user configurable. You can set up your own macros, hot-keys, screen colours etc. The window is NTSC only and is not resizeable. Text scrolling is very jerky and I didn't like the program at all! Another one to avoid.

Med.....

Version 2.1 is on Fish 60 - rather an old program. With this you can edit up to 32 text files simultaneously. As you open a file its name is automatically added to the menu for later (and instant) recall. The screen automatically configures to PAL, print-out is available and text selection is by 'point and drag' - far better than 'block markers'. The search and replace is very quick and this, to me, is as good a benchmark as any of an editor's speed. All in all a fair program - infinitely preferable to Jed.

Mg1b.....

'MicroGnuEmacs' from Fish 131. Bags of source code for you budding programmers plus lots of info should you wish to recompile it. It also contains an ARexx port. (I might get round to ARexx one day!) I didn't like it.

Textra.....

Textra on Fish 239 is a very good text editor. It uses a nice file requester and like Med, file names are added to the menu as they are opened. Text selection is by 'point and drag' but this program had a few bugs. The GURU called on a

couple of occasions! Not bad though.

Uedit.....

The latest version (2.5d) is on Fish 301. It is 'shareware' and until you send the author \$25 you will not get the full version with all the features enabled. It is described as a 'Text Editor for the Technical User'. The program is customizable to an astonishing degree - in fact it is awesome just HOW much it can be

"The program is customizable to an astonishing degree - in fact it is awesome just HOW much it can be configured to the user's requirements"

configured to the user's requirements. Automatic PAL screen, excellent tutorial, iconifiable (shrinks to a small Workbench 'icon' when 'asleep') etc etc. Just think, with this program you could configure it so that you could write your source code, check it, compile it, link it and then run it all from within Uedit! Amazing!

This really is an excellent and powerful program. If you like this one then it is well worth \$25. For a good example of just how much it can be customized see also UeTurbo on ICPUG-Text-2.

Az.....

I thought I would leave this until last as it is my favourite. The program is French but comes with both that and an English version. This time the author IS fluent in another language and so the brief but concise notes are very helpful. 'Az' is iconifiable, works with multiple files (including binary!), multitasks and the actual code is 'Pure', i.e., once loaded the program is a 're-entrant process'. The scrolling is beautifully smooth, the file requester excellent, search and replace very quick.... Excellent! This one is strongly recommended.

P.W.

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Ask MMG about Project X

AMIGA VISION

Multimedia producer Alan Puzey examines CBM's exciting new authoring system to see if it comes up to professional standards

It's not often that programs of the stature of DeLuxe Paint come on the scene, but I believe we may be seeing such a program evolving now. Just as DeLuxe Paint was a great utility from the word go - and considerably improved by version three, AmigaVision shows that same promise.

Having got to grips with the initial version, I am already using it professionally, and will shortly be removing Lights! Camera! Action!, DeLuxe Video and The Director from my hard drive, consigning them to the "use if necessary" box! AmigaVision is supplied with the Amiga 3000 or available separately, and is designed to present multimedia in an interactive environment. Commodore are obviously hoping to develop the Amiga where it has always had the most potential - which is the multimedia environment. "Eh, hang on," I hear you saying, "what are these multimedias and interactive environments!?" Well, long standing Amiga users will already know that its graphics and sound capabilities are what makes the Amiga the attraction it is, and multimedia uses these, as it is basically the presentation of pictures, graphics, sound, music, video and animations. Years ago, as a multimedia producer, I used video recorders, film projectors, photographic equipment, audio tape recorders and a vast range of control and peripheral equipment to produce multimedia shows. More recently, with the introduction of interactive sys-

tems - which meant that the viewers (or audience, or students) could interact with the programme, controlling its apparent content and the pace of presentation - extremely complicated and expensive computer control equipment was also necessary. However, these days, the computerization of these techniques has developed apace recently, culminating in this system for the Amiga, which puts professional quality interactive multimedia within the reach of us all.

"Initially, you use your favourite programs to produce the pictures, graphics, animations and music that you wish to incorporate in your presentation"

Why would you use it? From a professional point of view you may want to produce interactive training programmes, sections of mixed animation, graphics and sound for use within a video production, or 'point-of-sale' displays where the customer can obtain information about the services available. The public are becoming increasingly familiar with these, particularly the latter which are now found in many libraries and building societies, for exam-

ple. From a hobbyist point of view, AmigaVision is simply a great way to present whatever mix you want of pictures, animations and sound, or you can easily produce trivia or knowledgeable quiz games, for distribution amongst other Amiga users. In my case, I find



AmigaVision far easier to use for such purposes than Amos, though some devotees of that program may disagree. What cannot be disputed is the fact that AmigaVision uses an intuitive approach where no programming knowledge is required, unlike Amos.

So, how does AmigaVision do it? By simple, iconized control of the content and flow of your material, although BASIC type language is supported, and used to produce command statements for more advanced use in the production of intricate branching programmes. AmigaVision comes on four disks (boot-up, program and two example disks) with a comprehensive ring-bound manual. After booting up the program and loading the six examples in the normal way; viewing these

two or three times will not only give you a very good idea of the program's potential, but enable most Amiga users to produce simple AmigaVision programmes almost instantly, without recourse to the manual. It's that easy and intuitive.

The simplest way to explain AmigaVision is to go through the production of a simple audio-visual presentation. Initially, you use your favourite programs to produce the pictures, graphics, animations and music that you wish to incorporate in your presentation (eg. DeLuxe Paint and DeLuxe Music). These individual component parts are then assembled within AmigaVision as follows.

The first screen which AmigaVision presents you is a flow window with a 'main menu' band of icons along the bottom of the screen. Clicking on any of these icons, other than the trashcan, offers a new band of icons related to the one chosen. For an audio-visual presentation the AV icon is chosen and this reveals Screen, Sound, Speak, Music, Gfx, Brush, Video, Anim and Text icons. These icons are then dragged to the required position in the flow window, as in the illustrations, to



form a flow chart. Icons are related to one another in AmigaVision and termed as sibling, parent, child or partner icons. They are restricted in their positioning to one another and if they are placed incorrectly in the flow window, an error/help message is displayed. Icons are executed from top to bottom and contained within the module icon, which in effect is the title/shell for the programme you are making. Looking through the examples will give you a good idea of icon relationships.

"The animation and transition can be previewed before closing the requester (or doing more alterations), and going on to the next icon"



Double clicking any icon will reveal a requester panel. It is within these panels that all conditions are set. As these are numerous and comprehensive, only the major ones will be discussed here. Ignoring the basic module icon, double clicking the Anim icon brings up its requester panel. Here the animation file and its path are called up and routed via the Directory gadget. It is named for easy recognition within the flow window, and any useful memos added. The pointer may be kept or removed from the screen. Exact positioning of the animation or a picture on the screen is defined using the left and top gadgets. The Transitions gadget provides a wide range of transitions between scenes, at varying speeds. Some of these will appear bizarre if succeeding pictures do not use the same palettes, as is common with other slideshow programs. Finally, the animation and transition can be previewed before closing the requester (or doing more alterations), and going on to the next icon. Should you require any assistance, there are numerous help gadgets that may prevent you having to go back to the manual.

Double clicking the Speak icon produces a similar requester. Here one may select an ASCII text file to be spoken by the Amiga's built-in speech synthesiser, or type in the text directly. Again there is a range of gadgets to modify the speech characteristics and to loop or repeat if required. Double clicking the Screen icon brings up a similar requester to the Anim icon. Interlace or overscan can be chosen, the palette adjusted and the screen resolution set. The latter is a useful function - used with the left and top gadgets, enabling 'small' pictures to be accurately placed anywhere on the screen. Further down the flow window is a Sound icon and the requester for this shows gadgets for directories, stereo or mono, repeated plays and looping. Digitized sound files of the 8SVX format are required to work properly within AmigaVision. Other sound files will almost certainly be rejected.

Elsewhere, within this audio-visual module, I have used Gfx and Music icons. The graphics requester allows control of colour cycling within a picture and the use of Objects.





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SUPER VHS GENLOCK

The new Super 8802 from Marcam Ltd. will be launched at the November Commodore Show. Prices are yet to be fixed, but the unit can be purchased either as a complete product or as an upgrade to an existing 8802. Come and see the new machine on stand 48 at the show. Features include:

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STAND 48, COMMODORE SHOW



Objects are extremely useful in more advanced AmigaVision programmes, and can be produced using the Object Editor. The Object Editor, which crops up in many of the requesters, is like a basic drawing program. Simple shapes, such as rectangles, circles and polygons, and imported DeLuxe Paint brushes, are used as hit boxes. They can stand alone on the screen, or be superimposed on a background picture. There is a good example supplied with the program where the user is presented with hit boxes in order to select a picture demo, sound demo, animation demo, a combination of all three, or to quit. The mouse is used to click on a hit box and cause the programme to take that particular action. This is the fundamental procedure behind branching programmes. An

"The final 'flow chart' of your application can be printed out, either in graphic form as it appears on the screen, or in text form"

alternative Object is a text box, which either invites input via the keyboard or provides the user with text material.

The Music requester provides directories for SMUS music files and instruments. This aspect of AmigaVision has given me the most problems in use. The gadget for the instrument path does not seem to work as smoothly as the others and throws up a lot of error messages. This is further complicated by the rejection of most of my music files on the grounds of them not being true SMUS files or that they are crunched. For those with Midi units, they are fully supported by AmigaVision.

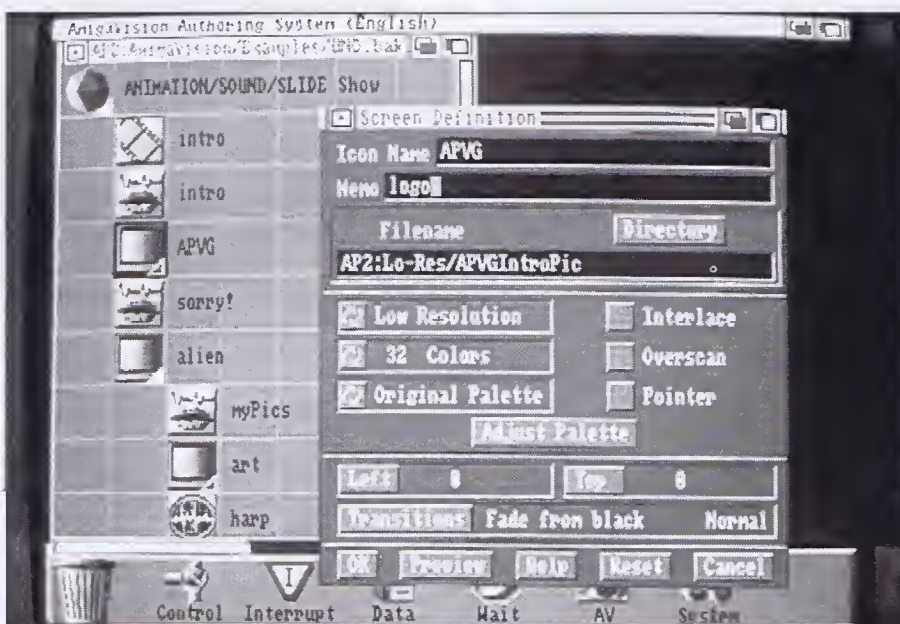
The finished module is then saved in the normal manner. There is a useful facility within the main pull down menu to install a disk and save your programme to it, with all the relevant components put in new directories and the relevant new paths formed. To show the presentation, Present is selected from the same pull down menu. The final 'flow chart' of your application can be printed out, either in graphic form as it appears on the screen, or in text form. A very useful aid for trouble-shooting or planning new applications

So, that is an example of the simplest use one can make of AmigaVision; Amiga User International will no doubt cover the more advanced routines in later issues; space in this article allows only a summary of the numerous other functions available. Referring back to the main menu at the foot of the opening screen, the following additional functions are available. Clicking the Control icon brings up a range of Call, GoTo, IfThen and

IfElse routines. These are used to govern the flow of AmigaVision programmes by providing complex branching and looping facilities. The Interrupt icon brings up Keyboard and Mouse icons which in turn, invite the user to interrupt the programme by specific key presses or mouse clicking. The Data icons refer to data bases that can be utilized within a programme. One of the example programmes provided invites the user to click on areas of the U.S.A., whereby AmigaVision uses a database to put the name of the relevant State, together with the Capital City, on the screen. Databases may be created within AmigaVision or imported from Superbase and DBase3. This facility merits an article on its own and is an essential ingredient of a professional multimedia program. The Wait icons pause the programme until specified conditions, or a user response, are met, or they may simply control the time period that a picture appears on the screen. Module icons are used to tidy up the structure, flow and timing of your application.

"Commodore have a number of improvements and additions in the pipeline"

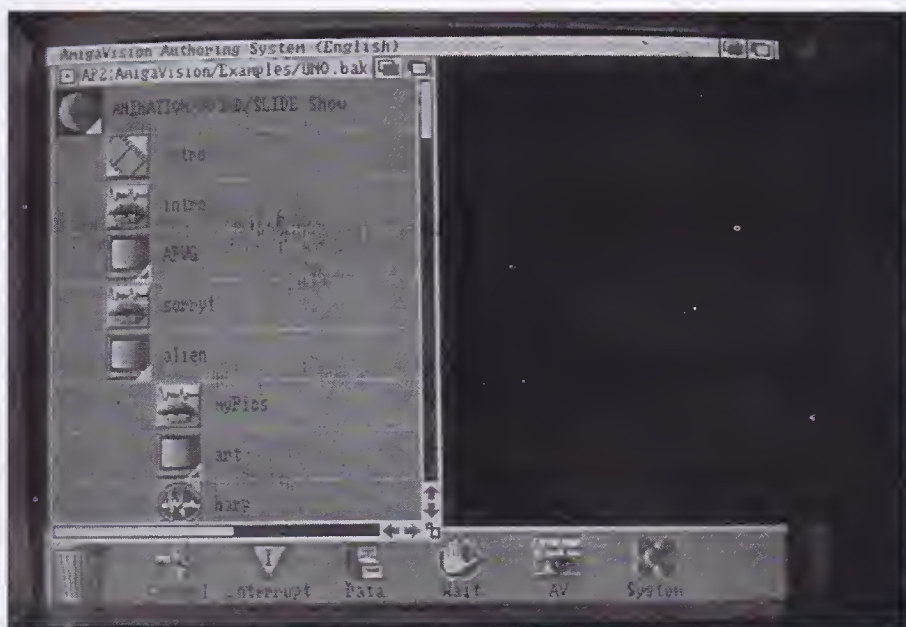
AmigaVision merits a hard drive and lots of memory (one meg. minimum is recommended, as usual), though it certainly operates on floppies, with the minimum. A useful function here, within the pull down menu, is the Content Window. Similar to the Flow Window, it may be used to import all those components such as pictures, music and text, from which floppies they are on, into this central area for easy transfer into the Flow Window. Naturally, when using a



hard drive containing all your component parts for a particular application, it is not necessary to use this function at all.

Summarizing my impressions of this great program, I particularly liked the overall program, its aims and its mode of operation. It is highly intuitive and easy to use for basic productions, whilst for advanced applications - the facilities for database use, feedback in testing and the use of wild cards for answer strings provide essential features. Also, the AAAE Player Device, produced by Ariadne for their own original multimedia program, is included. This is capable of controlling a variety of videodisc players, incorporating still frames or video sequences into your programmes. A videodisc player being one of the two items of equipment to which I do not have access, I have not as yet tested this function. The other item that I don't have, but which is supported by AmigaVision, is a touch screen. This is another example of the professional approach behind this program, as touch screens are a fundamental part of interactive multimedia, and probably provide the most common interface with which the public use such interactive programmes.

There were a few mistakes in the manual, but this is the first version, and there was a useful question and answer section. When installing on a hard drive, be careful which fonts are in your font directory, as the AmigaVision examples expect certain fonts to be there. I would like to see music



files other than SMUS supported, as many Amiga users find other systems such as SoundTracker and MED easier to work with. On my particular copy, some of the error messages flashed onto the screen too fast to be read; maybe this was a bug? Whilst speaking to one of the developers of AmigaVision at the recent Computer Graphics Exhibition, it was obvious that Commodore have a number of improvements and additions in the pipeline. One

example of future development, was a data disk of useful pre-formed Objects. Such improvements will enhance AmigaVision as later versions surely enhanced DeLuxe Paint. As I said at the beginning of this article, I am already using this program professionally and am sure it will become the standard Amiga multimedia program. Thoroughly recommended.

A.P.

COMPUTERS IN THE HUMAN CONTEXT

Edited by Tom Forrester (Basil Blackwell H/B 340, P/B £16.95)

But how many of the owners and managers of businesses, both large and small, who have installed computer systems know exactly how using them affects their employees, both organizationally and socially? And are they sure the systems they have are being used to their full potential? With the enormous amount of over £200 billion (\$300 billion) a year being spent worldwide on computers and communications hardware and software it is surprising that comparatively very little has been written about the social consequences and possibilities of the present day information technology (IT) revolution.

This book has brought together a collection of essays and studies by some of the experts, (and there are, apparently, only about 300 or so), on the subject of computers and society.

The general consensus seems to be that 'many companies and institutions are not using IT effectively because they have ignored or underestimated the importance of the human factor'.

Alvin Toffler's vision of 'electronic cottages' where employees worked from home rather than go into the office each day has not materialized as quickly as was expected when it was first mooted

possibly, as Forester says, because of the psychological problems involved. People like working with other people and will put up with the misery of daily commuting because the company of others finally outweighs the solitary life. That is not the only reason, of course. Many homes, because of their size or environment, are unsuitable for a 9 to 5 day to be worked in. Children, spouses, even animals, demand attention and some people are without the self-management skills and disciplines needed to work alone. So productivity drops and output falls way below what was at first predicted.

But new technology does not always work successfully in a commercial or industrial environment either. And the reasons are many and varied. Insufficient training and support, inefficient selection and recruiting, inexact job design and structuring, even health and safety and ergonomics can play a part. Most importantly, it seems, human resource specialists are seldom involved at an early enough stage.

The book is divided into four parts. Computers and — Society, People, Organizations and The Future, with for and against on all the subjects. I must admit I found some of the essays hard going but, on the whole, the majority were informative, in-

teresting and highly readable.

Some surprising hypotheses are formulated and discussed, while some of the information furnished is an eye-opener. Did you know that the French have a system called Minitel, an electronic telephone directory, which is distributed free to their telephone subscribers and provides access to more than 4,500 consumer services 24 hours a day? How about that British Telecom?

There is also a list of selected further reading on all the issues presented, for anyone who would like to take their knowledge beyond that included in this book.

In 548 pages Tom Forester has gathered together an enormous amount of information and, possibly because of this, it caused the only thing to which I took exception. The print is exceedingly small, making prolonged reading an effort. That apart, this is an invaluable anthology of works on the pros and cons of our hi-tech age.

As Forester asks, 'Is our future being determined by technology or are we to some extent free to choose and shape the future?'

'Computers in The Human Context' may help you to decide.

D.M.



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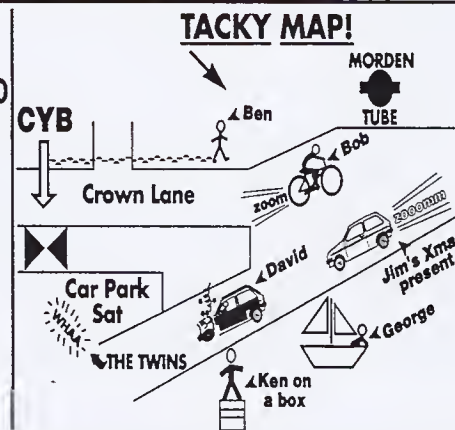
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Amiga Printers Inside and Out

The printer is one of the most rewarding and irritating add-ons that any computer can have. Andy Eskelson reviews a book that has some dubious minuses and a useful plus or two

This is a book from the Abacus/Data Becker range, and is by Ralf Ockenfields, and is number 15 in the sequence of books that Abacus has published.

The book is aimed at the non-technical person, and explains many of the terms and functions common to many printers. It does this in a clear and easy to follow manner and the inclusion of the companion disk makes it possible to try out the files on your printer as you read through the book.

There are 255 pages in the book divided up into ten chapters Appendix A & B and an index. The book also covers WB 2.0 in respect to setting up printers.

In general, the book is well laid out and of a very high quality, but there are quite a few oddities that came to light when I was reading through it.

One of the first things I do when examining a book for the first time is have a quick look at the index, and the appendices, this gives me a good idea of the topics covered and the amount of work that has been put into the book.

Appendix A in 'Amiga Printers' contains some connection diagrams, for the parallel port and the serial port. There is a very well known feature on the Amiga's parallel port and that is the 5 volt output on pin 14. Some printers put this pin to ground and this can cause some damage to the Amiga's interface circuits. The diagram shows this pin connected through to the printer. The normal function of pin 14 is to enable the auto LF function of the printer.

If the printer implements this function then it will never work, because the 5 volt output will hold this pin in the inactive state. Normally Amiga printer leads do not use this pin at all!

The diagrams for the serial connections are for two types of handshaking (a method that prevents loss of data) the diagram on page 223 indicates that it is for hardware handshake, and the diagram on page 224 is for software handshake. This is completely wrong. The titles for the diagrams have been transposed and the software handshake is really the hardware handshake and vice versa. This error is carried into the index as well! Not very encouraging for the observant reader. . .

I was impressed with the description of the preferences system, as it very simply

explains the functions of the often confusing graphics screen, as I was with the escape code description and the numerous examples. They are very sensibly laid out with the example following the command in question, and with all the options presented very clearly.

The reader will find many useful tips hidden in the text and they are often reproduced on the supplied disk ready for use!

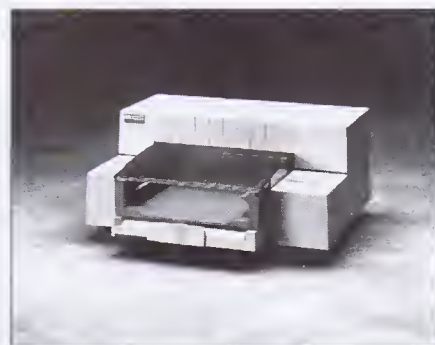
There are a few more confusing points in the book, page 129 talks about the speed of the printhead being approximately 1/100th of a second, when it really means the pins in the printhead. On page 143 the statement is made:

'The character sets located in the printer obviously can be accessed by the printer but cannot be changed or overwritten. However, the characters that you design are placed in the printer ROM (read only memory) and can be changed, erased or overwritten' and it goes on to say that the data in the printer ROM is lost when power is returned.

"If the printer implements this function then it will never work, because the 5 volt output will hold this pin in the inactive state."

It is fairly obvious that what is meant is RAM not ROM, but this book is supposed to be simple and non-technical, so I would have expected the proof-reading to have been done a little more carefully.

Mention is made of a PD program called PRTDRGGen, and there is a copy of this on the disk. This is a problem that enables the user to create or change printer drivers. I have used this program to create drivers, and it really is a VERY nice program, but it is complex. The book implies that you can edit printer drivers with PRTDRVGen. Well, that is true in one sense, but you have to be aware that PRTDRVGen only works with WB 1.2 drivers, and it can get very confused if you try to edit a 1.3 driver. PRTDRVGen drivers WILL work with 1.3 and 2.0 workbenches, but you will not have access to the clever



smoothing routines offered by 1.3 and above drivers.

There is also one very important aspect of Amiga printers that seems to be completely missing, and that is information on ANSI X3.64. This is the STANDARD that the Amiga uses when talking to a printer via a printer driver. This could have been included as another line in the command listings/examples and it really does need to be explained to the user what its effect on printers is.

There are quite a number of pages devoted to TextPro and BeckerText, describing how to configure them to your printer. Not the most interesting examples, but users of these two products will appreciate this inclusion. However, this does indicate the obvious German origin of the book.

This book is NOT one of the best that Abacus has produced. It gets a bit sloppy in certain areas, and it fails in places when looking through the eyes of a beginner. If you are happy with the manual of your printer and you can find your way around it without any real problems, then it probably is not worth getting this book.

On the plus side, there is a LOT of very well set out information, more importantly with lots of practical examples of their use, and the average Amiga user will find this book very much better than a printer manual and would be glad to see it on the bookshelf.

A.E.

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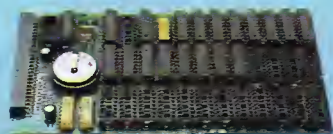
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ICD AdRAM A500

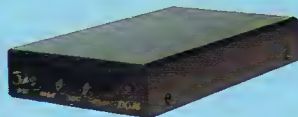
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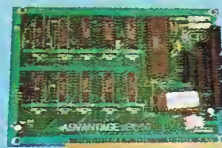
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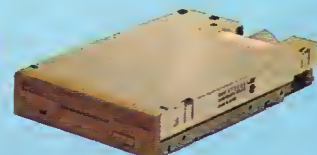
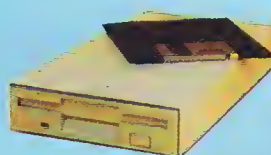
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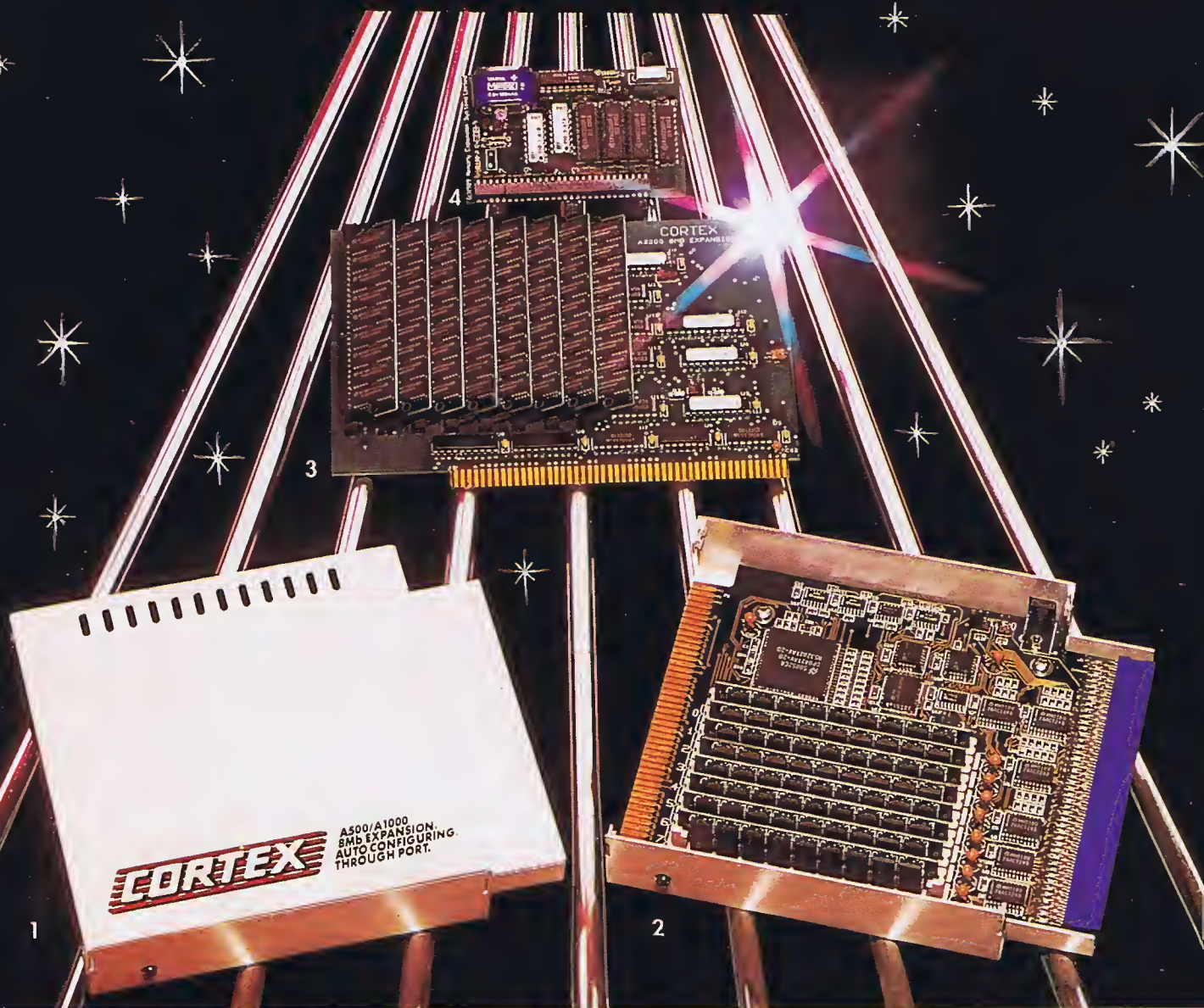
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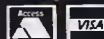
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PICTURE

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PERSONAL FINANCE MANAGER

In some respects it is true to say that the more money you have then the more troubles that money will bring you. I myself would like to find out one day if that statement is really true, but will probably never know.

Still, what is more true to say is that the less money you have then the more you will have to keep it in check (no pun intended!). The Chancellor of the Exchequer has the same problems with the nation's money... albeit in larger amounts... as do all of us. He has to allow certain outgoings to cover the costs of each service. He has also to share out the income so that there is enough in each pot to last the full fiscal year. We all know that the Chancellor has, every April, worked out the budgets for the year and so all of us should organize our own money in the same way. We also know that about half-way through the year, he finds all his calculations are wrong - and so probably do we!

This is where PFM comes in very handy, it can save you its purchase price in no time at all. Used correctly PFM can control what money you have, by creating your own budgets, then monitoring their performance. The times when your bank account surprisingly went overdrawn at the end of the month will be a thing of the past, you'll be able to manage your income and outgoings in a professional manner.

Until PFM came along there wasn't what I would call a "professional" program to handle my personal finances in the man-

ner I liked. For my own use, until now, I have used a spreadsheet, to show me all the ins and outs and balances. I had to draw the sheet up myself, basic formulae thrown in, and the more you want the sheet to show, then the formulae became complex and more cumbersome and slowed down the calculations. Not so with PFM!

"The times when your bank account surprisingly went overdrawn at the end of the month will be a thing of the past"

Straight away it is easy to see the advantages of using PFM. There is a very friendly Intuition screen with pull-down menus that allow entering new transactions a simple matter of just filling in a form. PFM does the rest. Opening up a new standing order is just as easy, PFM will ask you the details and will do the rest.

What you see is a statement, very much the same kind as you receive from your lovely-jubbly Bank Manager. All transactions are listed with dates, descriptions and amounts, either credits or debits. Then when it is time to check your account against the bank's statement PFM can perform what is known as rec-

onciliation, this is a process that describes the juggling of recent transactions until a balance agrees with your statement. You know the sort of thing, when a recent cheque has not yet cleared through the system, but you have already taken account of it. PFM will be able to work out just which cheques these are.

I said professional and I mean professional. You have five different types of window display at your disposal. There is the statement window, standing orders, a balance plot, a budget comparison graph and an entry distribution chart.

Taking these one by one the first window, as I said before, is very much the same as you are used to seeing from the bank, up to 200 transactions on a roll over basis can be shown. There is one additional feature however, you can code each transaction i.e. for outgoings relating to the house, car or food you can give them a distribution code "H", "C" or "F" for instance.

All standing orders and their frequency may be listed, up to 50 different orders can be managed per account. The balance plot window gives you a graphical display that will let you see easily, when and by how much, your running balance will be over a given period.

The entry distribution window is yet another graph, this time you can see it as a pie chart. Up to 100 coded entries, however, only 10 at a time may be viewed as a pie chart. Finally a budget comparison graph lets you see if, and by how much, you are overspending against your budget assessments.

Of course no self-respecting Amiga owner who is concerned enough about his finances is without a printer. PFM supports any bog-standard 80 column printer connected to the parallel port. You cannot get a printout of the graphs normally, which is a bit of a shame, but should not detract from the overall product.

Well, by now if you aren't completely convinced that PFM can work wonders with your money, then maybe you should be the next Chancellor. With the aid of PFM you probably will be.

B.C.

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11/01/90	Petrol	16.34		T	4135.40
12/01/90	Clothes	68.98		H	4066.42
16/01/90	Shopping	43.86		C	4022.56
19/01/90	Credit Card	225.63		X	3796.93
19/01/90	Petrol	14.56		T	3782.37
22/01/90	Insurance	24.22		H	3758.15
25/01/90	Car Tax	100.00		T	3658.15
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C++ THE ONCE AND FUTURE LANGUAGE

PART ONE

Self-confessed C addict John Kennedy looks at how "the best programming language in the whole wide world" has been improved in the first of this two part series

With good reason, C has become the main programming language for the Amiga. The ease at which the Amiga's library routines can be accessed and the amount of control over the custom hardware are just two of the features beloved by C programmers. Take into account that a typical C compiler can produce some of the smallest, fastest code this side of an assembler, and languages such as Pascal and BASIC start to look very silly.

Bearing in mind that C evolved from nothing more than a high level assembler for a relatively obscure micro-processor, it is nothing short of amazing that it still exists, never mind amassed the huge following it has.

However, there are always those stalwarts determined to find fault with C. "There is no proper type checking" they say. "What about object orientated programming then? It's not a language for the future."

"The constructors and destructors of the screen class will automatically open and shut libraries and create structures for you. Bliss!"

It is true that C has - shall we say - rather flexible type checking. For example, just because you define a function to deal with Ascii characters, doesn't necessarily mean you can't use it with integers. Most C compilers work on the premise that the programmer is always right, no matter

how odd his or her requests might be.

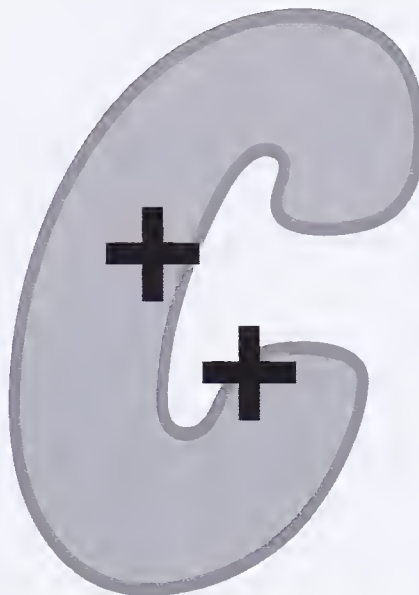
This is a great approach if the programmer always is correct, but for those of us who occasionally make mistakes, it's always nice to be told (in the nicest possible way of course) that we've botched it.

This unique freedom offered by C can become exceptionally dangerous in the large software engineering projects undertaken in the 90's. What is needed is a more 'object orientated', 'modular' or 'black box' system of programming.

A 'black box' is a code module which performs a function on given set of data. It

Furthermore, as each code module only communicates with the others via its pre-defined input and output ports, a module can be completely re-written as long as the port specification is not changed.

For example, a sort module may use a list of names as an input, and an alphabetically sorted list of names as an output. How the sorting is carried out is irrelevant to the rest of the program. Imagine though that after a program has been used several times, it is decided that it can be accelerated by making use of a different sorting algorithm. All the programmer must then do is place the new algorithm into the form of a code module. It can then be



(usually) has an input and it (usually) has an output. The Object Orientated Programming (OOPS) philosophy demands that such code modules are isolated as much as possible, in so far as one module is physically restrained from accessing data in another module. Thus the chances of data accidentally being corrupted are considerably reduced.

"Learning C needn't be a difficult task, especially on the Amiga"

swapped with the original module.

As long as the input and output structure is maintained, no other element of the program has to be changed.

However, those niggles from the whingeing anti-C faction wouldn't go away. It would have been possible to update C piece by piece until it had answered all the criticisms, but with even differences in the so-called standards UNIX C and ANSI C, such a step would have taken years and produced thousands of different versions. Result: Chaos, with no-one quite sure which version to use. Look at the available versions of BASIC if you want to see what could have happened to C. The solution was to jump straight to C++, a step taken by Bjarne Stroustrup at Bell Laboratories.

C++ builds on the C language, straightening out a few minor points and adding

some major new features. If it means anything to you, you could say that C++ is to C as Modula-2 is to Pascal. As a result, as well as having all that lovely control over the system, you also have access to a complete Object Orientated Programming system.

(As an aside, the name C++ is a pun which only C programmers will recognise. It's not wildly side-splitting, so don't learn C simply to understand it.)

C++ For New Users

As C++ is a superset of C, and so any newcomers will have to be able to program (at least a little) in C - preferably a fully ANSI compatible version.

The mechanics of C programming are largely unchanged. Variables, pointers, functions, structures - they are all present in C++ so you'll need to be fairly confident about using them.

Learning C needn't be a difficult task, especially on the Amiga. There are plenty of excellent books on C programming (and plenty of not so excellent books too). There is even one in the public domain available on disk!

When programming the Amiga in C, there are two very different tasks in hand:

1. Learning to program in C, and
2. Learning to program the Amiga.

In my opinion, learning to program the Amiga is by far the more difficult task of the two. I learnt the basics of C programming on a VAX mainframe in a matter of days. It took a long time before I had a C program running on my Amiga.

If you are planning on learning C++, I recommend you concentrate on the primary task of C. When you graduate to using C++, it becomes dramatically easier to make use of the Amiga's libraries and

so some of your Amiga-specific learning will have been wasted.

Good and Bad points

Using C++ on the Amiga can be almost an enjoyable experience. By defining various intuition features as classes, you can save yourself an incredible amount of effort.

For example, Lattice C++ comes with a 'class library' which defines Screens and Windows as objects. This means opening a screen is now just a matter of declaring a variable of the correct type. The constructors and destructors of the screen class will automatically

"A 'black box' is a code module which performs a function on given set of data. It (usually) has an input and it (usually) has an output"

are slowed down tremendously. The obvious solution is to pre-compile all your intuition based functions, and link them in at the last moment.

Once you build yourself up a selection of library functions, code generation takes hours rather than days.

C++ on the Amiga

One of the most respected C compilers available on the Amiga comes from Lattice. Although pricey, it's just about the best you can get and comes with some superb documentation.

No doubt you'll be overjoyed to hear that Lattice also produce a C++ compiler. Again it's pricey but it's the best. In fact, it's the only Amiga C++ compiler I've come across! Again, documentation is of a high standard and even includes an independently written textbook called "An Introduction to Object Orientated Programming and C++", which wouldn't be out of place on a university reading list.

Perhaps surprisingly, one of the major advantages of C++ is the ability to make listings more readable.

Next month we'll take a look at the main differences between C and C++ that make this possible.

J.K.

"Most C compilers work on the premise that the programmer is always right, no matter how odd his or her requests might be"

open and shut libraries and create structures for you. Bliss!

On the minus side, C++ takes extra time to compile. What actually happens is a pre-processing of the C++ source to convert it to a C program. Then the C program is compiled in the usual way.

When using the Intuition libraries, things

Professional Pages

Mark Smiddy looks at Hewlett Packard's new front runner in a long line of professional inkjet printers - the DeskJet 500

Enter the new generation of inkjets. These new machines do not need special ink, print on normal sheet (photocopier) paper and do not cost the earth. One of the most popular of these has been Hewlett Packard's much vaunted Deskjet range - and the most recent addition to the range is the Deskjet 500.

Unlike many other designs paper is automatically fed from a bin at the front and delivered back to the front after printing. With the DeskJet series, an auto-sheet feeder (for around 50 sheets) is fitted as standard. This can be a drawback, because there is no provision to load traditional fanfold - which is cheaper and slightly wider too.

The final test for any printer is how good the output is. According to the specifications, the output resolution is 300 x 300 dots per inch (DPI) - comparable to Apple's Laserwriter II or HP's own LaserJet. The practical resolution is difficult to judge but the sheer output quality is staggering. It may not be laser quality, but very few people will be able to tell the difference.

The machine features a wide range of fonts for word processing, although only

not be Victor Kyam but I was so impressed - I bought the machine. You cannot get a better recommendation than a reviewer who is prepared to put his money where his pen is.

HP DeskJet 500

Points for: Excellent output; wide range of fonts and styles; very easy to use; limited emulation of HP LaserJet II; replacement print cartridges; prints on envelopes.

Drawbacks: Ink can smudge when printing in NLQ; Epson emulation extra; font and emulation cartridges are expensive, external PSU.

Interface: Parallel or Serial

Fonts:

Courier - 10, 16.67, 20. Landscape printing facility

CG Times - Proportional Letter Gothic - 12

RRP: £688.85+VAT

Test Drive

Printer manufacturers are well known for being bullish over the claims they make for the speed of their machines. Not surprisingly, Hewlett Packard suffer from the same symptoms. Most manufacturers quote "burst" figures - rather than the achievable, IN-USE figure. If HP quoted realistic values, people would think the machines were slow.

These tests were created using nothing more sophisticated than a word processor (Arnor's excellent Protext 5) and a stopwatch. The actual test was as follows. Four pages of random text were created without any special style or formatting. Then timings were

taken and averaged from the time the machine started the print job to when the last sheet was delivered. A second test - for throughput - timed how fast an operator could repeatedly load and feed a complete page from the paper tray to the output tray.

Courier (10 CPI)

2 Minutes 24 Seconds

110 CPS actual (240 CPS claimed)

Up to 3 Pages per minute.

Approximately 1.6 APPPM

Times (proportional)

3 Minutes 2 Seconds, 88 CPS

Approximately 1.3 APPPM

Courier NLQ (10 CPI)

3 Minutes 34 Seconds

75 CPS actual (120 claimed)

Approximately 1.1 APPPM

Page throughput: Load and eject pages without printing

4 APPM

Compared to claimed values, these results may seem a little startling - the draft speed was less than half that claimed - but are they? If you already have a printer you might like to try these tests yourself - but be prepared for a shock! Over the years I have benchmarked many printers from simple thermal plotters to lasers. To date, not one of the machines tested has come anywhere near what is claimed. This leaves the potential buyer somewhere between the devil and the deep blue advertising claim. You can use the burst figures as a rough guide, but never expect to be able to achieve those figures.

Key:

APPPM - Average Printed Pages Per Minute

APPM - Average Pages Per Minute

CPI - Characters Per Inch

CPS - Pages Per Second

Win A DeskJet!

By special arrangement with a major supplier, AUI's sister publication, The Directory has a Deskjet machine ready to give away. This forerunner to the Deskjet 500 lacks some of the fancier features of the later machine, but still offers remarkable near laser quality output. To get one all you have to do is buy a copy of The Directory, enter the competition, and win!

If you just cannot wait to get your hands on one, Adams World (who supplied the review machine) have a limited number left - at "a very competitive price." Contact them for more details.

M.S.

Contact:

Adams World

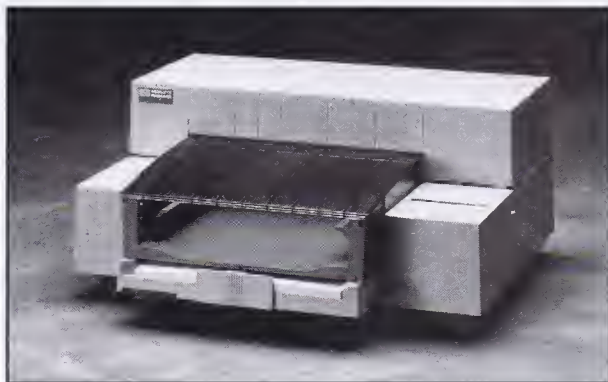
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Courier can be selected from the control panel. Hewlett Packard claim this is because such features are usually under software control anyway. Perhaps they should look at the Star LC-10, which allows the user to select one of three internal fonts and prevent normal software overrides. This, if anything is the only fault with the machine since it shows too much of its heritage.

Is the Deskjet 500 just a pretender to the crown or can it deliver Near Laser Quality promised by the advertising blurb? I may

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Dan/Anarchy (ring me) Mark/Bri/Jo/Windy, and any other lunatics out there in Amigoland also a megagreet
to all the phreaks we met at the Commodore show ... or will meet as this is being written before the show!

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531 Captured Imagination - Nice comp by Anarchy
530 Anarchy MF Comp - SUPERB! Nice demo Dan + 4-Mat
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378/379/380 C Manual - Brilliant way of learning to program
356 Fish 327 - Messlidos PC file reader
354 \$10 1.6 - The most cool CU killer utility for editing and stuff
345/346 VideoApplications - Great fonts and scrolling utils
340 Jazzbench - Workbench clone with more functions
334 Darkstar Utils 2 - If you expect me to list all the utilities on
130 Darkstar Utils 3 - these diskthen forget it! Just buy one
333 Darkstar Utils 4 - and ring Red devil up and ask him! (Dont)
330 PE Utils 5 - More utils by Mr. Devil, all I can say is they are all
331 PE Utils 6 - very well done and contain LOAOS of very
332 PE Utils 7 - useful utilities that no home should be without!
N.B. None of these disks contain kirby vacuum cleaners
180 Wordwright - Comprehensive wordprocessor + more utils
123 ST-91 - Rather good instruments diskdone by me!
122 ST-90 - I will do some more soon which will be kool!
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PIXEL 3D

Producing 3D pictures and animations on the Amiga seems to me, to be one of the most challenging and satisfying uses of the computer. It's just like creating your own environment, your 'own little world' if you like. I just love playing god! One feels so secure getting everything just the way you want it. You can then interact with your new 'world' in any way you wish, go anywhere, drive, fly, spin and tumble. It can be as Surreal and dream-like as you could possibly imagine. Your only limit, really IS your imagination (oh, and possibly your family, your friends, your job, your bank manager...).

The trouble is that even the most simple of 3D objects seems to take an interminably long time to make and that's before you start fiddling around with the lights, camera lens and position, the ambient light, colours, textures...I could go on.

This gets even worse when you start to work in a professional situation, with clients who are used to seeing TV graphics produced on multi-thousand pound systems. Of course, they want the same, but they don't want to have to pay the same for it.

"...yes and then we'll have our logo fly in with the name spinning around it...do you think we could have that by Friday?..."

How long is it going to take me to construct an accurate model of their logo and worse still that fancy writing they use for the name?

What I need is a program that will SIMPLY turn a picture into a model.

"The more I use Pixel 3D, the more I am impressed with its simplicity and the superb quality of its output"

Pixel 3D doesn't seem to be anything stunningly useful at first glance but looks can be deceiving. There is already a well established program on the market for converting 2D images and brushes to 3D objects: The only problem with it, is that it is finicky and fiddly to use. You spend half your time adjusting the image trying to get it to come out the way you want in the 3D program. Even after hours of frustration, some images just won't seem to work. I could probably have done it quicker by hand. Doesn't this defeat the object?

Pixel 3D, on the other hand, is very much an automatic process. I certainly

felt somewhat helpless the first time I tried it. I just did not feel in control at all. No fiddling around deleting and moving points and adjusting the programs sensitivity in an endless attempt at the perfect conversion. Surely this is what using the Amiga is all about? ~

The following is a condensed version of the manual.

"Open Pixel 3D. Simply click on the output format (Sculpt, Silver, DXF, Videoscape). Decide whether you want extrusion and the amount. Choose the file to convert through a reasonable (functional but clear) requestor. Wait for a few seconds and the file is converted and automatically saved."

"Er...hang on...can't I just twiddle something before..."

No you can't and this is the program's greatest quality. I have now realised what an absolute blessing it is to have a totally automatic process that simply and quickly converts every single image that you throw at it. This is just how computers are supposed to work but very rarely do. And the result? Perfect 3D objects every single time. Yes, that is what I said, every time! The more I use Pixel 3D, the more I am impressed with its simplicity and the superb quality of its output. I wish all Amiga programs could be this graceful.

"I built an unusual object in Real 3D: an infinite hollow cylinder textured with my Indian pillow which sits on my large comfortable armchair"

Let me take you through a typical example of using Pixel 3D. I decided to produce a title for this article. This will be made up of a 3D version of the box Art in some sort of 3D environment.

I digitised the box and manual cover using Digi View 4 in 2 colours. I loaded this into Deluxe Paint III and cleaned it up a little.

'PIXEL' was vertically bent and saved as a brush, '3D' stretched and saved as a brush.



Both brushes were converted in Pixel 3D (Both perfect). This suddenly becomes the quickest and most 'instantly' successful stage of production. Hence it is highly time (and therefore cost) effective.

These new objects were now loaded into Sculpt Animate 4D. I increased the extrusion of '3D' and made the sides out of metal. Add a sphere, a lamp and set the camera up. Ray trace and save.

Meanwhile I built an unusual object in Real 3D: an infinite hollow cylinder textured with my Indian pillow which sits on my large comfortable armchair. This was painted in an infinite spiral around the inside of the cylinder and I 'sat' in the middle. Render and save. Load them both into Photon Paint 2 and merge together.

The result is a composition that I could not possibly have produced with tradi-



"The other result is the Amiga-specific phenomenon known as 'jaw dropping'. I still find it incredible what you can do with this computer"

tional Art & Design solutions. The other result is the Amiga-specific phenomenon known as 'jaw dropping'. I still find it incredible what you can do with this computer.

What other computer and software could promote such exciting creativity and produce such stunning images for so little investment? The Amiga is truly the artists computer.

So, after using Pixel 3D for about a week, it has now become an integral and almost transparent part of my creative productions.

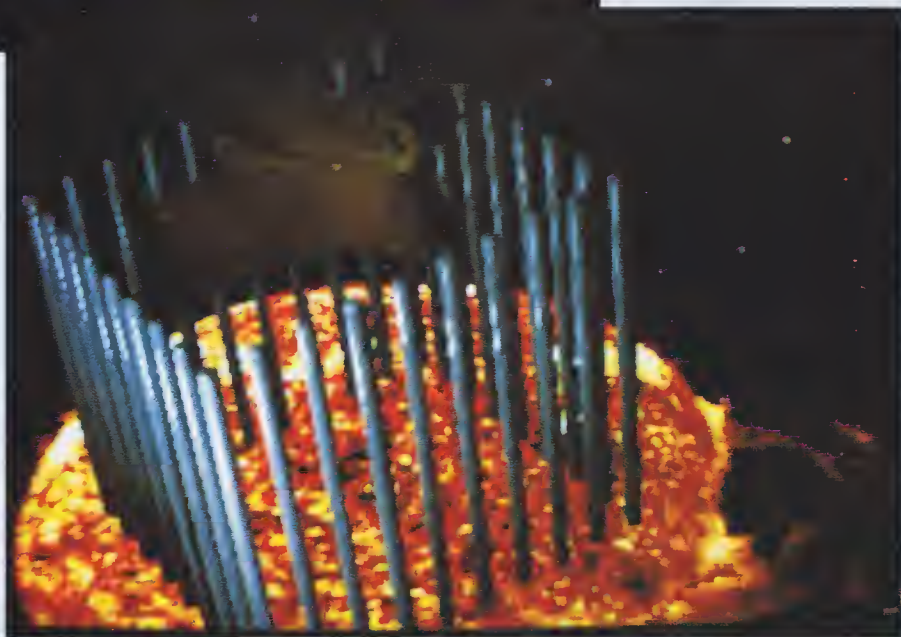
As to whether I would recommend Pixel 3D? Well, if you use your Amiga for any kind of 3D work, then I do not see how you can do without it. I can't.

B.M.

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CAR-VUP

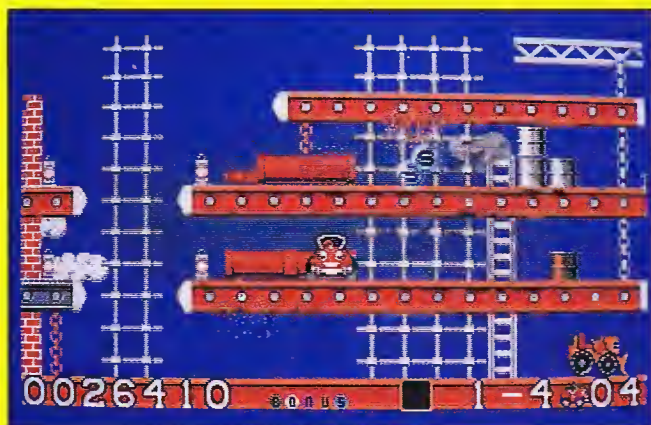
Core

Take just about any car game, and the emphasis will be on sleek, red, throbbing sports cars, speeding down Californian highways or round spectacular Grand Prix circuits. The car you're given in Car-Vup may be red, but that's where the similarities end. If you can imagine a kind of Rainbow Islands with a car as the central character, you'll have some idea of what it's all about.

Instead of the usual Ferrari, your vehicle this time is a stocky little thing, rather like Benny the Cab from Who Framed Roger Rabbit. Unfortunately for him, he has a problem with his

baddies, but occasionally you'll pick up a bonus weapon and fight back. Loads of other bonuses

"Put your favourite record on, sit back for a few games and you'll be at peace with the world; just the job after an hour and a half's journey home from work in a tube train full of halitosis sufferers"



undercarriage. He's seen the doctor about it, but is still waiting for the results of the tests, so for now has to make do without any brakes. This makes him a bit difficult to control at first, but with a number of his friends in grave danger, the problem has to take a back seat.

The route to his endangered chums takes you through countless levels of two-way horizontally

"He has a problem with his undercarriage. He's seen the doctor about it, but is still waiting for the results of the test"

scrolling platforms. As you drive across a platform, you change its state depending on where you are in the game. Some platforms need to be coloured in, others have to be straightened out, wiped clean and so on. To clear a level, you have to drive across every platform. Once you've done that, you're airlifted to the next by a cheerful helicopter.

The theme of each level dictates the type of enemies you'll face. The building site is patrolled by walking wheelbarrows, bricks and bulldozers. Bats, witches and ghosts are found in the haunted castle. Most of the time you're forced to avoid the



rain down throughout the game, and there's a down-pour of fruit and other extras as you move from one world to the next.

Jumping around the platforms, colouring in girders, all seems a bit lifeless at first. However, it's not long before you work up a strong addiction to it. Car-Vup is a very relaxing game. There's a weird kind of satisfaction gained from filling in the platforms, jumping from one to the other and scooping up all the bonuses. For a change you're not forced to play to the backing of a tinkly tune. Put your favourite record on, sit back for a few games and you'll be at peace with the world; just the job after an hour and a half's journey home from work in a tube train full of halitosis sufferers.

With completely smooth parallax scrolling rounding off the colourful graphics, Car-Vup is going to appeal to gamers of all generations. It's simple and easy enough to control, so kids are going go for it, and it's just such a pleasant, undemanding game that the rest of us will find ourselves hooked in no time.

T.H.

Graphics: 80% Sound: 78% Playability: 82%

Absolute Value: 81% Price £24.95



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POWERMONGER



ELECTRONIC ARTS

Populous II? Well, not exactly. You'll have to wait a little longer for that, but until then you can satisfy your megalomania with Bullfrog's latest world simulator.

First impressions suggest that Powermonger is something more than a re-hash of Populous. Take a closer look however, and you'll soon realise this is far from the truth. Big games always seem to go down well with strategists, and although it's not hung like a 60 billion location Mike Singleton game, Powermonger's world is about as big as anyone could ask for. There are 195 territories in all. Starting from the top left corner of the map, you're ambition is to work your way through the territories to the opposite corner. At your journey's end, the final battle with the island's occupants will decide just who rules the world.



"The presentation is far removed from the simple block-graphic style still seen in most battle simulators, bringing the whole idea of wargames right up to date"

Your conquest begins with you in control of a young and enthusiastic captain of a modest army. Although it might seem like a good idea to just scoot down to the opposite corner of the map, you'll find you're stuck on the first island. Before you can move to the next island or territory, you first have to gain control of your current surroundings. Each village in the vicinity is ruled by one of many leaders. Some leaders may have

a fairly expansive empire, while others could just be the local hero. Gaining control of these villages can be achieved in one of two ways. Either you join forces to make an alliance with the villagers, or you take the more common route, and launch an attack.

Whether you win or lose these battles depends, of course, on the strengths of both sides. To improve your chances in battle, you can take care to avoid long marches across hilly ground, especially during the winter months. A well-armed band of men is also much more likely to come out on top. Preparing your army for battle is actually more important than your interaction in the battle itself. When food is scarce over the winter, the best place for your men is the village workshop. Click on the "invent" icon and your followers will chop down a few trees, maybe mine a little iron-ore, and set about making weapons and other items to be traded with neighbouring settlements.

Unlike Populous, Powermonger's gameplay is more along the lines of a traditional wargame. The conquest theme is far from a new idea, but it's one that's rarely implemented as well as this. The presentation is far removed from the simple block-graphic style still seen in most battle simulators, bringing the whole idea of wargames right up to date. Apart from the extremely effective 3D graphics, the rest of the screen is well laid out, providing a much friendlier user-interface than the usual menu system. My only gripe here is that the text is absolutely minute. It can be hard to read on a good monitor, so fuzzy TVs could lead to a few problems.

The speed of the game can be set by the player, which is a useful feature, allowing you to get to grips with the game in the early stages, and also giving you the opportunity to "fast-forward" the less-active times of year. It gets another point over the competition with its use of sound. Whatever your men are doing, there's almost always a sound to go with it. Order them to

MONGER



Once you've managed to get two thirds of the territory's inhabitants to follow you, you can choose your next target. As your conquest

"Before you can move to the next island or territory, you first have to gain control of your current surroundings"

gathers momentum, you'll be joined by captains whose armies you defeat, allowing you to delegate various mini-missions. However, you're not the only one with dreams of world domination. As time goes by, the power of opposing captains gets steadily larger, with alliances and empires making your job even tougher.

invent, and you'll hear the felling of trees, followed by the noises of their tinkering in the workshop. Even when they're just camped outside a settlement, there's still the crackle of the camp fire.

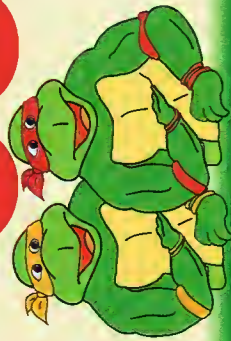
Because of its fresh approach, Powermonger is going to attract more than just hard-core wargamers. The ongoing conquest should help its lifespan, and for anyone who really gets into the game, it could provide a distraction for months on end. If that does prove to be the case, then the £30 price tag would be well justified. In any case, anyone looking for an alternative to the stack of arcade games released recently could do a lot worse than give Powermonger a shot.

T.H.

Graphics: 89% Sound: 80% Playability: 63%

Absolute Value: 82% Price £29.95

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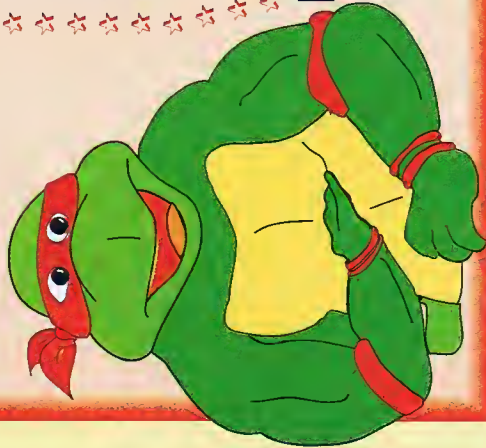
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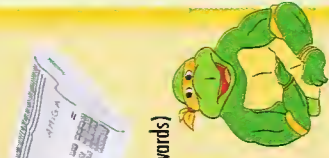
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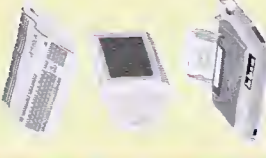
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CARTHAGE

Psygnosis

Have you ever fancied yourself as Ben Hur, living under the tyranny of ancient Rome? I have, and since hearing of Carthage just over a year ago I have eagerly awaited its release.

When Cinemaware's *Defender of the Crown* was released it depicted the Anglo-Saxon era of Robin Hood and his merry men, *King of Chicago* was placed in the American prohibition years in the 1920's, *Wings* was set during World War I, and *Lords of the Rising Sun* had its scerie in ancient Japan. Other Cinemaware releases such as *Rocket Ranger* and *It Came From the Desert* were spin offs of the 1950's B-movie craze.

These games offered the gamesplayer the ability to play a part in some of the most popular type of movie scenarios. Now courtesy of Psygnosis, and probably surprisingly not Cinemaware, comes the Roman-dated Carthage. Moulded in the same way as the



Cinemaware releases, Carthage combines superb graphical arcade sequences with strategical gameplay.

The game is played on a 3-D fractal generated map of an area in North Africa, the centre of the Phoenician colony. Carthage is a prosperous city and its downfall would, most certainly, lead to the loss of the Phoenician colonies of North Africa and Spain.

Set in 146 B.C. the main hero is Diogenes, a Garrison Commander of the Carthaginian Army. His aim is to stop the might of the Roman Army descending on Carthage. To do this he must control the wealth of Carthage and distribute funds to cities in need. The more money a city has the more tax it will collect, and the money Carthage receives from it will increase. Diogenes is able to transfer money between one city and another, or from Carthage to another city. While he is in a city he may enlist troops with the city's funds, or sell troops to bolster the city's coffers.



"Carthage is a prosperous city and its downfall would, most certainly, lead to the loss of the Phoenician colonies of North Africa and Spain."

Money is the key to winning the game, without controlling it Carthage stands no chance of being held. The city garrisons can only be bought with the wealth in the city, the mobile armies can only be re-supplied by city garrisons, and you, Diogenes, are the only Carthaginian who can distribute money and buy city garrisons.

Starting from Carthage Diogenes must travel throughout the province on his chariot taking the wealth from the capital to the smaller cities. When travelling between cities Diogenes takes command of his chariot and speeds along the dangerous roads. The sacks of gold which are



carried are constantly knocked off the chariot as it hits logs that are scattered along the unkept paths toward the next city. Roman assassins try to intercept Diogenes's chariot, and aim to run it off the road using their spiked-wheeled chariots. If they do all the money being carried by Diogenes is lost to them.

"Money is the key to winning the game, without controlling it Carthage stands no chance of being held"

The chariot run between cities is one of the most graphically attractive features of Carthage, and while it may be easy to travel from city to city, beating off the challenges from the Roman chariots, it is not easy to do so while keeping possession of the bags of gold.

At the start of the game a large Carthaginian army is formed and is led by Hasdrabul, the Carthaginian General. Diogenes has full control over this and a further four mobile armies, which



he must create by enlisting troops using a city's garrisons and wealth. While in any city Diogenes can enlist its garrisons to form an army which he can then dispatch to other cities to gather more garrison troops.

These armies can be sent to battle with the invading Romans when the opposing Generals are within fighting distance of each other. By using a zoom-in factor on the fractal map the small battalions of the army can be individually controlled to defend their General, or attack an opposing General. During the battle an update of battalion strength is displayed.

The battles are strategically fought, and not by arcade means - which will please a lot of tacticians - and with the fractal map showing surrounding landscape the tactics associated with fighting downhill/uphill can be planned.

The menu functions allow the loading and saving of games, the game speed, and a restart game option. The game tends to be a long affair so many sessions may be required to play a full campaign. The map displays are a little slow to update, but they are fractal generated to show landscapes for battle tactics, and can be zoomed into and out of.

Carthage is an excellent strategy game based around the Roman era and superb graphics and a strategic, rather than arcade, battle sequence strengthens it further.

P.K.



Graphics: 93% Sound: 76% Playability: 90%

Absolute Value: 88% Price £24.99

OPERATION COM-BAT

ELECTRONIC ZOO

If war erupts in the Middle East because of Saddam Hussain and the latest Gulf Crisis then close range combat will probably take precedence over long range nuclear strikes. If this, in fact, does happen then Commanders from both sides will control units of artillery and soldiers to gain tactical advantage. Those tactics will determine which side wins at the end of the day.

Operation Com-Bat is a strategy game based around the concept of close range operational battle. You can take control of a small detachment of artillery and wage war against the computer or a human enemy.

The game is a graphical strategy and is broken down into display maps and control areas. All decisions and moves are made using the tactical display and the tactical grid maps. The tactical grid map is a 32x20 block terrain map which displays your units and their positions, the known enemy positions, and the major landscape features. The tactical display map displays an enlarged section of the tactical grid map with more detail such as type of unit, detailed landscape, and type of enemy units and is the map on which all moves are made.

Players take turns to move their units, fire at enemies, re-supply fuel and ammo, and call on air support. There are several types of units, each one occupying a grid block. The units being light artillery, light armour, heavy armour, heavy artillery, and supply vehicles. Each type of unit features differing attributes such as gun range, gun strength, defence and mobility which determines how many blocks units can be moved each turn.

Artillery, armour, and supply vehicles can be moved each turn a distance determined by their mobility and fuel level. Movement is activated in the tactical display map by clicking on the unit with the mouse and then again on the desired position.

During each turn the armed units can fire at

enemy units dependent on their gun range, which is from 4 to 11 blocks. With the relatively short amount of fuel and ammunition which can be carried by 'armed' units it is often necessary to re-supply them by moving the supply vehicles adjacent to them.

There are six differing battle scenarios that give each side differing sizes of battalions. Each scenario will vary the game strategy and time spent playing. Even more variety is injected with

the inclusion of a choice between six battlefield maps.

These maps are Rocky Canyon, Jungle Ruins, Desert Dunes, River Meadow, Marshland Bog,

and Archipelagos. These features give the game much more scope and add to the lasting appeal of the game.

A nice feature of the game is that two machines can be connected via modem and the game played from hundred of miles apart. However, I don't think that this concept is as popular in Britain as it is in the States.

Several years ago the 8-bit machines were inundated with this type of game where the emphasis was placed on the strategy gameplay rather than the graphics and sound. The Amiga however doesn't seem to have gathered much support over this side of

the Atlantic for such releases and the Americans have become masters of this type of game.

Operation Com-Bat is the latest of this genre to come to the UK via Electronic Zoo and the Amiga's extra capabilities have been used effectively to offer the variety of scenario that the 8-bits can't offer. It might even be useful to those commanders boiling under the sun in Operation Desert Shield

in the Middle East. Perhaps Saddam Hussain could be persuaded to stake Kuwait on it instead

of in a war.....
P.K.

"A nice feature of the game is that two machines can be connected via modem and the game played from hundred of miles apart."



Graphics: 67% Sound: 36% Playability: 88%

Absolute Value: 82% Price £24.99

TOYOTA CELICA GT RALLY

Gremlin

Something of a Celica fan himself, the Ed was excited at the arrival of Gremlin's latest. To his disappointment, he found it didn't include a stage in which you race across town from the designer's to the repro house at 2 am in a desperate attempt to get the next issue out on time. After explaining that an early morning trans-London section may not be missed by the average gamer, I persuaded him to take it out of the bin. As he handed it to me covered in the remnants of last night's kebab, I wished I'd kept my mouth shut.

What you do get is a set of three stages, each of which is separated into ten sections. You can choose to practice any stage, or enter the championship and drive all thirty sections.

The approach is similar to that taken by Mandarin's Lombard RAC Rally. It's all viewed through the driver's eyes with a mix of solid 3D vectors and sprites. Trees, rocks, and in fact any



natural objects on the roadside are taken care of with the sprites. Churches, houses and other buildings use the vectors. Sliding off the road leads to a 20 second penalty, and a false starts are harsher still.

"Moving through a map of the forthcoming section, you can lay down markers along with appropriate comments, such as 'Hard left', 'Easy right' and so on"

So what's new on offer? The most important original feature is the speaking co-driver, who replaces the usual road signs, warning you of all the approaching bends. He's not perfect however,

so you can "program" him before each stage. Moving through a map of the forthcoming section, you can lay down markers along with appropriate comments, such as "Hard left", "Easy right" and so on. During the Scandinavian sections, your windscreen gets snowed up, so the game includes a wiper function, which can be turned on and off when ever you want.

"Celica Rally is the best game of its type, but there's still a long way to go before rally games can seriously rival the likes of Super Hang-On, RVF Honda and Indy 500"

Despite these interesting additions, it still feels like just about every other computer rally game. The handling of the car is slightly improved. Counter-steering works to a degree, and you're not just forced to the outside of a tight bend as you would be in Outrun for example, but there's not much sensation of speed. During the wet and snowy stages, the car slides around too much, forcing you to trundle around the bends at a sedate speed; not exactly a recipe for an adrenalin rush.

Celica Rally is the best game of its type, but there's still a long way to go before rally games can seriously rival the likes of Super Hang-On, RVF Honda and Indy 500. Even so, anyone interested would do well to give it a once over for an alternative slice of race action. *T.H.*



Graphics: 62% Sound: 60% Playability: 67%
Absolute Value: 66% Price £24.95

Strider II

US Gold

US Gold's licensing deal with Capcom has given them the chance to convert some excellent coin-ops. One of the best of these was Strider, recreated on the Amiga by Tiertex in the summer of '89. In a reversal of the normal procedure, Tiertex rather than Capcom have developed the sequel, which is soon to be converted back to coin-op form.

When creating sequels to games, it's common practice to retain or improve the popular features of the original, adding new twists, improving the graphics and so on. It's strange then, to see that Tiertex have done the opposite!

Like its forerunner, Strider II is a multi-directionally scrolling platform game. Strider himself is a cross between Olga Korbet and a samurai warrior. To help you in your world-saving quest, you're armed with a gun and a weird kind of sword, which sends out a flashing arc, killing anything it touches. As for your defences, you can leap over most enemies, but other than that, you'll have to rely on tactics of doing it to them before they do it to you.

For an example of how Tiertex have messed up the game, take a look at the Strider sprite. Rather than keep the excellent sprite from the original game, they've replaced it with an inferior version. The same is true of the enemies, who are either unimpressive humanoids, or "cop-out" robots built from simple blocks and balls. Instead of semi-intelligent attack patterns, the enemies simply run into you. Some of them are armed, and fire at you even before they appear on the screen, and as their bullets jerk towards you at a fair old rate, you'll be lucky to get out of the way in time. If you do you're likely to leap right into the next enemy. There is a way around this, and that's to take the game at a very slow pace, nudging the scrolling along a little at a time, which hardly gets the adrenaline pumping.

"Strider himself is a cross between Olga Korbet and a samurai warrior"

More disappointment comes when you hear the music, which has been taken directly from the first game, as have the sound effects, including that irritating grunt each time you swing your sword.

Strider's scrolling could have been smoother, and seemed a likely candidate for improvement. That of the sequel is appalling. It moves in such big steps that keeping track of the action can become extremely difficult, a situation emphasised by the similarly jerky sprites. Gameplay is hampered further still by the unresponsive



controls, mystery deaths and level designs far less imaginative than those of the original.

Many of these problems stem from slow-running and scruffy program code. Everyone

"It moves in such big steps that keeping track of the action can become extremely difficult"

knows the Amiga can smooth scroll a full-size screen with one arm tied behind its back, and is more than capable of handling a fairly simple platform game without resorting to sluggish controls. I can only assume this is yet another cheap ST port (cheap that is, for the developers). With Amiga games outselling ST titles by a long shot, isn't it time that everyone switched to the Amiga as the lead format? Just think yourself lucky Commodore didn't put a Z80 processor in the Amiga; we'd all be playing port-overs from the Spectrum!

T.H.

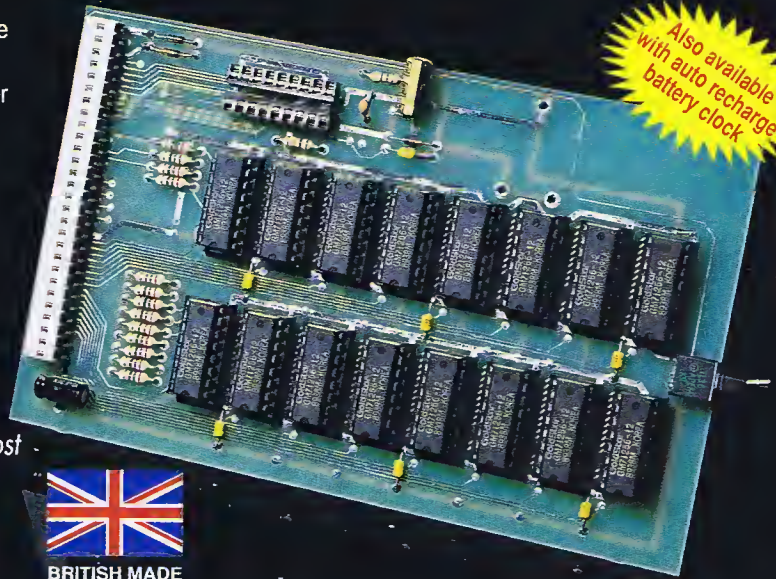


Graphics: 45% Sound: 58% Playability: 40%
Absolute Value: 40% Price £24.95

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Indy 500

Electronic Arts

It stunned MS-Dossers (MS-Dossers? Tramps who sleep in their computers cardboard boxes?) the world over when it was released on the PC, and now it's going to stun you. You too can now take part in America's famous Indianapolis 500 motor race, burn rubber with the best in the business, steal the glory on the final lap, and cause some of the most spectacular pile-ups you'll ever see.

A race around an oval track might sound a bit unexciting compared to the snaking bends of a Formula One circuit. Activision had a go at a similar type of game with Days of Thunder, but ended up with a slow-moving race around a small track. Indy 500, you'll be pleased to hear, knocks the stuffing out of Activision's offering. If you took our advice, you'll have hung on for Indy, and you'll be well rewarded.

"You can try to improve upon your grid placing of 33rd by entering the qualification rounds"

Coming from the States, you'd expect Indy to be more of a simulation than an arcade game. That is the case, but unlike most simulations, there's absolutely no shortage of turbo-charged white-knuckle race action. There's no need for a "quickstart" chapter in the manual. Impatient drivers can get straight into the action from the beginning. Select "race" from the menu, and you're immediately transported to the cockpit of your car as it squeals away from the back row of the grid. Packed grandstands on either side, you



tear down the straight to get the best possible line for the first bend. A bit of over-enthusiastic driving and you could find yourself clipping the wheel of an opponent, before spinning out of control, usually to end up off the track on the grass verge.

Indy is so flexible, that as well as catering for the instant thrill seekers, at the other end of the scale, there's ample opportunity for those who like to start at the beginning and do everything properly. Learning to drive in the middle of a

"Select "race" from the menu, and you're immediately transported to the cockpit of your car as it squeals away from the back row of the grid"





hard-fought race can be difficult, so a practice option has been included. You get almost the whole track to yourself, which makes it much easier to try out any new driving techniques, or test different tyres, suspension settings and the like. In the pits you make all sorts of adjustments to your car, including shock absorbers, gear ratios and roll bars. With no right turns on the circuit, Indy cars don't have a differential. Instead, one tyre is bigger than the other, the difference of which you can also alter in the pit. You can try to improve upon your grid placing of 33rd by entering the qualification rounds. A consistent four laps of around 45 seconds each should put you up a couple of places. A nice detail here, is that the stands are now half full as the crowds begin to arrive for the race. Real joystick junkies can go for the whole 500 mile race, but for those of us with a little less staying power, three shortened races are also available. The first of these grants you an indestructible car, but although you can still drive, the computer won't give you a placing at the end if it deems you to have crashed. Crashing is something you find yourself doing a few times every race in the early stages. That is, unless you drive around carefully at 40mph. Even then you'll probably get shunted from behind and put out of the race.



All this would be enough on its own, but there's one feature that gives the game an enormous boost, and that's the action replay. It's limited to 1 meg machines unfortunately, but is brilliantly done. At any time in the race you can call up the last 20 seconds of action on the replay. Seven different views are available. You can watch it all again from the cockpit, from just behind your own car, from above, from the trackside, or from a series of TV cameras which pan and cut from one to the next. Sometimes you'll suddenly spin off the track for no apparent reason. A look at the replay will usually show a car coming up from behind that you didn't spot. Other times you'll be involved in such a suicidal pile up, that you've just got to see it all again from every possible angle!

Together with the replays and the high speed of the graphics, another big point in Indy's favour is the realism. The cars look and move just as they should, including your own. If you find yourself facing the wrong way, after backing up a little to make some space, a stab on the accelerator with a full lock on the steering spins the car round just like you've seen it done on TV. What a change it makes from having to drive something with the turning circle of an ocean liner.

"Other times you'll be involved in such a suicidal pile up, that you've just got to see it all again from every possible angle!"

The "real world" generated by the 3D vector graphics is very convincing. You have total freedom within the confines of the track. If you fancy, you can drive the wrong way, reverse around the track, stop broadside across the home straight, or use the pitlane as an alternative route if the traffic's heavy. Rather than the usual engine drone, you get real life engine sounds from your own and the rest of the cars. Each car seems to have its own little brain, overtaking, dodging crashed cars and so on. At the end of the race, all those left running trundle into their position in the pitlane, carefully backing into their parking spaces to the sound of their humming engines. Indy 500 is the best racing game to have appeared for ages, tussling with Stunt Car Racer for the title of best racing simulation available for the Amiga, and shouldn't be missed by any Amiga owning speedfreak.

T.H.

Graphics: 95% Sound: 93% Playability: 91%
Absolute Value: 93% Price £24.95

ATF II

Digital Integration

From the publishers of F16 Combat Pilot comes the follow up to the original C64 game called Advanced Tactical Fighter which was released during 1988. Speaking as a flight-sim fanatic, I must say that ATF II bears no resemblance to anything like a serious simulation.

This is a game, albeit a game which requires lightning fast reactions and a bit of mind blowing strategy but still is a game, not a simulation. There are no flight theories to get to grips with here and the user could fly the plane without any practical knowledge, just open the throttle, pull back the stick, and you're off.

After a security code check from a page in the manual, the opening screen gives you a choice of demo mode, high score table, music/sound effects and allows you choose your skill level. There are eight levels, each, needless to say, making your task harder and being blown up even easier.



A balance of power screen shows both the enemies and your own war gains or losses as you progress. The higher skill levels start you off in a situation which makes winning the war more difficult as you have many more targets to get before your enemy gets yours.

ATF sets out your missions for you in their briefing room. There's a cute animated screen with a couple of guys working on their consoles. Then it's on to another animated screen when you can take on fuel and weapons. After that it's time to grab yourself a piece of the action where you are shown, in third perspective, sitting on the end of the runway ready for takeoff.

At the bottom of the screen there are three VDU screens that contain all the target details. With clever use of switching these displays you will be able to pick off targets one by one and here is where the strategy comes in. Quick changes of

weapon selection combined with aerobatic defence tactics against the enemy should see you through each mission with ease.

"There are no flight theories to get to grips with here and the user could fly the plane without any practical knowledge, just open the throttle, pull back the stick, and you're off."

The game becomes very hectic and extremely addictive. Your ATF has the ability to fly very close to the ground and will follow the terrain automatically when selected. A map of the area on the VDU shows the target and enemy plane positions. After a successful mission you can select the autopilot, you are returned to base for a safe landing, hopefully!



After the mission debriefing it's on to the next mission. You have loads to go at. Enemy bases, factories, tanks, submarines, ships, fuel dumps, communications and artillery all ready for the kill.

Digital Integration have made a good job of an arcade game with ATF II but if you want simulation stimulation then forget it. For the gamer ATF II is quite a challenge and has some nice graphics coupled with a dash of addictiveness to keep you interested for some time.

B.C.

Graphics: 71% Sound: 60% Playability: 70%
Absolute Value: 69% Price £24.95

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SHORT REPORTS

Damocles Mission Disk 1

Novagen

What's this then? Novagen jumping on the mission disk bandwagon? Some will see it that way, but it was in fact they who introduced the idea, back in the old days with their Second City add-on for Mercenary. The first Damocles Mission Disk gives you four new twists in the original scenario. These are loaded into the main game as if they were saved positions. Depending on the mission, various objects are placed in awkward positions, and your goal is slightly altered. Anyone who enjoyed and completed the original would do well to pick up a copy.

Price: £9.99 (requires the Damocles game disk to run)



Damocles Mission

Finale

Elite

It's the compilation season, but so far there haven't been too many worthwhile bundles. Finale is definitely one of the best around, and includes four varied arcade games from Elite's back catalogue.

Paperboy was a big coin-op hit in the mid-eighties, but only made it to the Amiga about 18 months ago. You control a paperboy on his rounds through an American suburb. Deliver to all your subscribers and you'll keep their business. Drum up new business by wrecking the houses of non-subscribers. Smooth scrolling and humorous graphics make it a lot of fun in short periods.

Overlander is the only non-licensed game in the package, and takes its inspiration from Atari's Roadblasters coin-op. A traditional OutRun game format is spruced up with rocket launchers and atomic bombs. Unfortunately the gameplay doesn't quite match the high technical standards.

Ghosts n Goblins is a very accurate conversion of the classic coin-op. Arthur the Knight is the hero, who battles through six levels of spooky platform action, from the graveyard, through the ice palace,



Finale

across the burning rope bridge, to the lair of the devil himself. The highlight of the collection.

Space Harrier received very little attention when it arrived on the Amiga, but is an excellent shoot 'em up all the same. It's very nearly as smooth and pacy as the coin-op, with massive 3D sprites whizzing in and out of the screen. The overscanned screen rounds it all off in spectacular style.

All four games display expert technical standards, which in most cases gives a big boost to the gameplay. This along with plenty of variety in the games makes it great value.

Price: £24.95

S.T.U.N. Runner

Domark



STUN Runner

Last year Domark did quite well in the battle of the "winter biggies", with Hard Drivin' putting up a strong challenge against Op Thunderbolt, Turbo Outrun and Chase HQ. The follow up, S.T.U.N. Runner, is far less exciting in both the coin-op and the Amiga versions.

It's another 3D vector graphic affair, this time set in the future. You control a ship skimming down a series of artificial bob sleigh runs, shooting indistinct vehicles, occasionally getting a boost from one of the few turbo panels. The coin-op was pretty speedy, so at least it was fun for a short while. The Amiga version runs at around four frames per second in general, and fails completely to put across any sensation of speed. The sluggish controls and simplistic gameplay seal its coffin with six inch nails.

Rating: 35%

Price: £24.95

Cosmic Pirate

Action 16

Originally released through Palace at full price, Cosmic Pirate is very slick shoot 'em up with quite a few original features. You play a



Cosmic Pirate

pirate of the spaceways, employed by a kind of interstellar mafia. Although your ship is fairly small, it can dock with any ships you catch, and take them back to base to be stripped down. Some of the ships are a lot bigger than the screen itself, so towing them home can be a bit of a handful. A few sub-games add a bit more variety to the whole thing.

The sprites and backgrounds are excellent, and all move around very smoothly. The levels are sprinkled with some clever special effects, and the soundtrack's well up to scratch too. It was a great game at the original price. For a fiver you can't go wrong.

Rating: 90%

Price: £4.99

Maya

Action 16

Maya is another of those typically strange French games. Programmed by the team responsible for Targhan, it's an arcade adventure set in the jungles of Central America. Exactly what you're supposed to be doing isn't made very clear in the instructions. A report of a deceased scientist who was on the trail of some Aztec mystery,



Maya.

along with a poem-cum-riddle is all you have to go on.

It turns out to be a combination of 3D jeep driving stages, trading, exploring and a spot of fisticuffs. The potential is there for an involving adventure, but it's let down by the rather gutless gameplay. Still, it's not bad for the price.

Rating: 70%

Price: £4.99

Rotor

Action 16

Taking inspiration from the likes of Asteroids, Thrust, Gravitar and company, Rotor has a very similar look and feel to Cosmic Pirate. You're under orders to fly into a series of caverns and recover various commodities. Hostile gun emplacements have to be avoided or destroyed, and contact with anything is fatal.

Although Rotor is very neatly presented, it's not as good as it could be. It's all a bit too sluggish to make for an exciting shoot 'em up, with fiddly movements taking priority over quick reactions. Even so, it's



Rotor.

one of the best of the limited range of Amiga Thrust variants.

Rating: 78%

Price: £4.99

Hostages

Action 16

With an embassy under siege, it's up to you as controller of an SAS style anti-terrorist team to sort things out. Four sections chart your progress from the surrounding streets to the final bloodbath. Part one has you positioning your men around the embassy, dodging searchlights and ducking into doorways for cover. Next it's time to get the rest of your team abseiling down the walls and in through the windows, with cover from one of your marksmen. Once you're inside, it's a 3D shoot out as you battle with the terrorists and lead the hostages to safety.

Variety is plentiful, and the original idea and execution makes for an enjoyable little escapade. Ominously coloured graphics give it a suitable atmosphere, rounding off a playable if not outstanding game.

Rating: 80%

Price: £4.99



Hostages.

The Ultimate Ride

Mindscape

The Ultimate Ride has been quite aptly named; it's enough to put you off bike racing sims for life! Hopes were high for the game, as it comes from the programmers of Fiendish Freddy and Infiltrator. That enthusiasm was substantially dampened by the time the seemingly endless options screens had made an appearance.

Eventually you'll find yourself on the grid of the first track. An official waves the flag, and you're off. As the first bend approaches, you discover the appalling handling of the bike. You could reasonably expect to take most of the corners in third gear, but in fact you're forced to slow right down and take almost every bend in first gear. The bike feels like both its wheels are buckled, wobbling around all over the place. The tracks themselves are very bare, and what scenery has been included is very blocky. Give it a miss.

Rating: 30%

Price: £24.95



The Ultimate Ride.

NINJA REMIX

System 3

Anyone who played *The Last Ninja II* and was somewhat disappointed, may have been wondering if this was the start of a decline for the highly reputed System 3 team. Although the System 3 logo was all over the packaging, it turns out that they didn't actually have anything to do with the programming of the game. Previous commitments meant that their distributor, Activision, were owed another ninja game, but System 3 had plans to break off the relationship. Activision were given the design, and left to produce the game themselves. Now they've made the break, Mark Cale's merry band have released the "real" Amiga *Last Ninja*.

"There are plenty of puzzles and problems to be discovered by newcomers to the game"

Although the title suggests a combination and reworking of previous ninja games, it is actually a conversion of the original *Last Ninja* released on the 64 back in 1987. As before, it's a game of six levels, each of which is a maze of isometric 3D screens.

The wilderness is the setting for the first level. A Chinese dragon guards the exit to the next, but before you get to meet him, you'll have to kill or seriously wound a number of oriental warriors. Starting out unarmed, you initially only have two moves available. Kicking and punching the guards

"Kicking and punching the guards into an early grave isn't too difficult, but life easier once you pick up some of the weapons left lying around."

into an early grave isn't too difficult, but life becomes even easier once you pick up some of the weapons left lying around. A sword thrust into the gut of an enemy tends to be a lot more effective than a slap round the face.

Fans of the original will probably find themselves breezing through level one, as it's almost a carbon copy of the 64 game; it even "feels" the same. As a fan myself, I found the following two or three levels fairly easy going, with only the second half really beginning to tax either the brain cells or reactions. That's not to say the game is too easy. There are plenty of puzzles and problems to be discovered by newcomers to the game. Although the levels aren't



enormous, they are all well detailed, and have kept that solid look. With six of these, there's a fairly big game for your money, and the wide variety of locations makes for an interesting adventure.

Even so, more could have been done with game. The screen is still reduced by an unnecessarily large status area, and the music sounds exactly like that of the 64 game. In effect, this is the 64 game. That's fine, but under the new name, it's bound to attract followers of the ninja series, who may well be disappointed to get it home and find they've just bought the same game they did three years ago, but paid #25 for it this time.

However, anyone new to the game is almost guaranteed many hours of absorbing arcade adventuring. As the ninja series is still to be cloned, *Ninja Remix* is a unique, original and very colourful mix of fisticuffs and brainwork that deserves to do well.

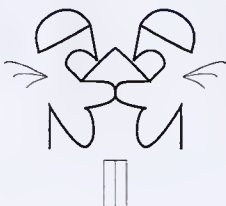
T.H.



Graphics: 80% Sound: 62% Playability: 85%

Absolute Value: 81% Price £24.95

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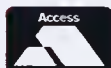
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ADVENTURE NOW!

'Always keep your droids powered up' advises Andy Moss. But it is not a reference to Anita Sinclair or even Chaos at Mirrorsoft etc..

As promised last month, reviews this issue are Heroes Quest and Captive, along with Omnicron Conspiracy from Mirrorsoft. But first, some hot news...

NEWSDESK

WONDERLAND AMIGA FINISHED



Wonderland. ▲ ▼



As you can see from these exclusive Amiga screenshots, Magnetic Scrolls latest multi window blockbuster WONDERLAND is looking very tasty indeed. It is the largest and most ambitious project that the company has ever undertaken, and boss Anita Sinclair purrs, 'From the technical point of view, people simply are not going to believe what we have done'. Bullish words indeed, but when you analyse just what this new system is capable of, then you get to realise that Anita's words are not merely PR speak (They never are! Ed). At the heart of the program lies a full multi-tasking mouse-driven windowing system with drop down windows. All the windows can be resized and



Wonderland.

moved anywhere on screen, and include icon-based inventory and object lists and a compass amongst others. You can drag objects in and out of them, put graphic animations into them, and then control the sprites independently using mouse or joystick control, even change the form and functions of the windows themselves to suit your mood. The graphics windows pop up and many feature animation that dovetails with events in the story. There is the usual text window, with changeable fonts, auto mapping, a tree structured help system, great music and for the non typists among you, an object/ icon command system. Author David Bishop, who incidentally is the adventure software development manager at Virgin, said to me recently that this game system will change the format of computer adventuring for ever.

Personally, I cannot wait to get a copy, which has been promised for next issue.

CHAOS AT MIRRORSOFT

The long awaited sequel to Dungeon Master is at last nearing completion. CHAOS STRIKES BACK continues in the

same vein as DM, with a new collection of nasties but includes a character portrait editor so now you can change the appearance of your party.



Chaos Strikes Back. ▲ ▼



Also **BLADE WARRIOR** which was pre-viewed to me way back last year is finally ready to be let loose on the outside world. Based around a traditional D and D scenario of hero versus evil, the game carries some stunning visuals of multi frame silhouette, that owe allegiance to the programmers backgrounds in film animation. One to look out for.

SIERRA AGAIN

You just can't veer a good company down can you. As if we have not had enough of Sierra with so many good games out at the moment, along comes news of **FIVE MORE** for this year!

KEEPING UP WITH THE JONES' is based on a board game of real life situations, getting a job to pay for the bills, get a better education to get a better job, invest money, even get mugged! You can play with three other friends or just against the computer, to be the first player to accomplish your real life goals. **HERO'S QUEST II** is the second in a series of four, this time set in the burning deserts of Arabia. Following your leaving the now peaceful town of Spielburg on a flying carpet in **QUEST I** you now travel to the magical Arabian city of Shapier. There you will discover the dark mirror image of gentle Shapier, the cursed city of Rasier. What are the secrets of the twin cities? Only a hero can find out. **KING'S QUEST V** heralds a new graphic style for Sierra's Amiga games, using airbrushing and super smooth animation, the games are looking more and more like Hollywood movies. You again play King Graham in the biggest quest to date with over 10 megabytes of game data and hours of digitised speech. **SPACE QUEST IV The Time Rippers** brings our friend Roger Wilco back. The last time around, I raved about the game, with its original soundtrack written by members of Supertramp, and its great humour, and devious puzzles. This time, Roger gets hijacked by the Sequel Police on his way home to planet Xenon, and is once again embroiled in an interstellar space romp. Finally, **RISE OF THE DRAGON** puts you into the 21st century as a private eye detective roaming the city streets to uncover some deadly crimes. Set in real time, you use a point and click interface that involves no typing at all. Sierra have just sent me a video of all these latest products, so I can see first hand how the games are developing. More about that next month.

ARE YOU A PERSIAN PRINCE?

Domark leap onto the fantasy bandwagon with **PRINCE OF PERSIA**, a game of evil and sexual deviance. Well, at least the bad guy is, and he is about to capture a beautiful princess, unless of course you can stop him. Starting in the dungeons, you have to make your way up through the



Prince of Persia. ⬆ ⬇



The Secret of Monkey Island. ⬆ ⬇

palace to the tower where dear old princess is held. Lots of puzzles are promised, along with some great animation.

US GOLD STILL MONKEYING AROUND

US GOLD/Lucasfilms follow up to the Indie games is to be **THE SECRET OF MONKEY ISLAND**, full of rich graphical quality using different 'camera angles' Monkey runs the Lucasfilm tried and tested route of puzzle and humour in a romp set in the swashbuckling 1600's. As well as solving problems with objects, there are a number of puzzles using funny dialogue, as Ron Gilbert the games designer says 'The one liners are more lethal than the the bad guys!' Due out next month.

Continued on page 98



Murders in Space

Infogrames

The French team at Infogrames have at last finished the sequel to their earlier successful adventure, *Murders in Venice*, and it has proved to be well worth the wait.

Murders in Space takes you forward in time to the year 2005 where you have been chosen to investigate an assassination attempt on the Commander of the Orbital Space Station "Pegasus". The reason you have been picked is because of your reputation in prior investigative researches, (Do they mean me?).

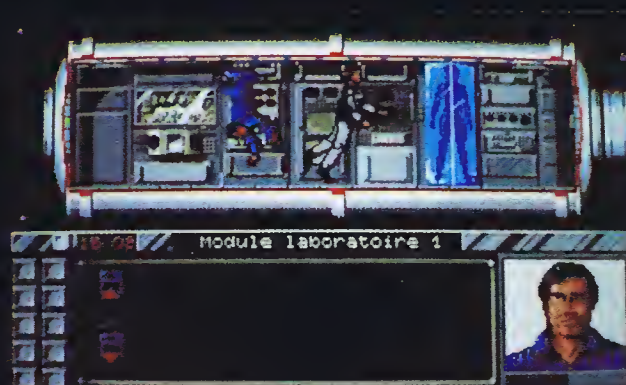
The adventure begins with the docking of your space shuttle to the Pegasus Orbital Station. For technical reasons you must return to Earth the following day with one of the astronauts who is returning back home after his tour of duty, giving you only 24 hours to find the culprit.

"Infogrames have turned what seems at first a simple adventure into a very complex set of puzzles"

On the face of it, your task would seem to be quite simple, as the Orbiter only has a crew of eight. The small internal size helps as well, apart from the extravehicular activity module (EVA), which can take you outside the station, inside the station there are just seven modules to explore plus the docked shuttle.

The game controls are mainly through the use of the mouse, moving, pointing and clicking interactions. Getting yourself around the station is simple enough in the weightless conditions of space. You will have to be discreet, however, as there is great danger in store if some of the crew discovered that you were investigating the assassination attempt.

The main aim of the game becomes more and more difficult, however, as events on board make things seem impossible. There are several obsta-



cles to overcome, not forgetting your 24hr time limit, each crew member has a different nationality and will not be alone or available for interrogation until certain times and if someone should be killed you will have to hide their body.

You have games within the game to solve as during your investigation, you should use the on-board materials and experiments. Discovering how devices work is part of the game. You can utilize the EVA module to explore the outside environment, there is also a versatile manipulat-

"Each crew member has a different nationality and will not be alone or available for interrogation until certain times"

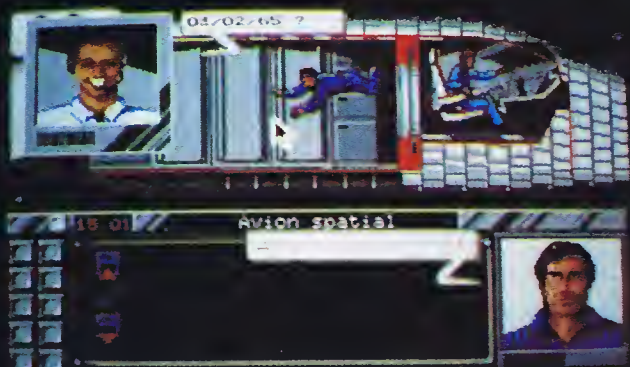
ing arm allowing mixing of substances in test tubes for experiments, there is use of a telescope and a cryogenic life support system.

The game graphics are what I consider to be satisfactory, game sound, where applicable, again only satisfactory. What makes this game good are the intriguing puzzles, just when you think you have solved one, other circumstances create another problem.

I loved the packaging, the metallic silver box, which includes some helpful clues and a sealed foil packet of "space food", which, when opened, gives you another surprise.

Infogrames have turned what seems at first a simple adventure into a very complex set of puzzles that will take several plays to successfully solve. It will be a long time before I can complete this futuristic frolic in space. Happy investigating.

B.C



Graphics: 50% Sound: 50% Playability: 60%

Absolute Value: 60% Price £24.95

U.K. GAMES CHART

Game	Company	Last Month	Rating	Price
1. Teenage Mutant Ninja Turtles	Microprose	(-)	N/A	£29.99
2. F-19 Stealth Fighter	Microprose	(1)	78%	£29.99
3. Cadaver	Mirrorsoft	(3)	89%	£24.95
4. Indy 500	Electronic Arts	(6)	93%	£24.95
5. Lotus Esprit Turbo Challenge	Gremlin	(2)	86%	£24.95
6. Kick Off 2	Anco	(-)	87%	£24.95
7. Powermonger	Electronic Arts	(4)	97%	£24.95
8. Rick Dangerous 2	Electronic Arts	(NE)	82%	£24.95
9. Team Yankee	Micropose	(10)	89%	£24.95
10. Shadow Warriors	Empire	(5)	95%	£24.95
	Ocean	(9)	90%	£24.95

NB We would have reviewed 'Turtles' for this issue, but apparently, though it was in the shops all over the country, Mirrorsoft could not find a single one for a review copy. We only remember that happening once before when a certain 'Outrun' could not be reviewed before it hit Number One in the Christmas charts – with good reason it seems for the negative reviews it received after thousands had bought it

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AUI-SPELL

part 2

In this second instalment Paul Overaa gets to grips with developing and testing the word separation routine for the AUI-SPELL spelling checker project

This month we're going to look at the problem of isolating words from a piece of text. We have decided, at least for initial trials, to use a simple definition - a 'word' is any group of upper/lower case letters delimited by any other character. The current objective is therefore to create some code that will allow words to be stripped from a piece of text.

The preliminary coding will be done by creating a collection of separate units. The end result of this instalment is a CLI program which can, given the name of a textfile, provide a list of the words present in the file. Why have I opted for this fragmented approach? The main reason is that it allows me to explain and test various sections in comparative isolation. Another, perhaps less important, benefit is that some handy utilities can be provided along the way.

"The necessary details are invariably provided in the compiler manuals but, the explanations are usually written in a way which only begins to make sense once you know what's going on"

We are opting for maximum speed for word separation, so I shall be using an assembly language word stripper. C is a very capable language for serious Amiga programming but there are still times when it pays to drop into 68K assembler in order to gain a bit of extra performance. To be able to produce 'mixed code' its

necessary to know a little about what happens when a C compiler makes a function call. The good news is that, providing you understand C and 68K assembler, learning about the mechanics of going from one to the other is not that difficult!

The necessary details are invariably provided in the compiler manuals but, the explanations are usually written in a way which only begins to make sense once you know what's going on in general terms. This month's notes should complete this part of the picture.

So, essentially we have got to create two pieces of code: firstly the high-level C code for loading a file into memory. Secondly, the piece of assembler code whose job is to actually search through the buffer looking for (and isolating) individual words.

High-Level C Code

This is the easy part because the high-level code has only a few well-defined jobs to perform. It must look at the file specified on a CLI command line, find the file, check its size, and then allocate a suitable amount of buffer space before copying the file into memory. The only other thing which the routine needs to do is pass control to the assembly language patch which scans the file for words. Once control returns to the C module we just execute a few appropriate deallocation/closedown statements.

The code I have used is quite deeply nested. To appreciate why this is necessary let's have a look at what has to be checked in order to get a successful file load...

A: User must have given the correct number of parameters on the CLI command line.

B: The file specified must actually exist.

C: Memory must have been successfully allocated for a FileInfoBlock structure.

D: The AmigaDOS Examine() call (which will place the file details into the 'file info' block) must have been error free.

E: The memory allocation for the buffer must have been satisfactory.

F: File must then have been successfully opened and loaded into the buffer area.

Each of the above stages are dependent on any earlier stages being error free. Each operation is therefore tested and subsequent operations only carried out providing all earlier operations have been successful - its this requirement that is most easily handled by deep nesting. At the heart of the 'successful test' sections you will find the reference to my assembly language routine. This is a relatively tidy way of ensuring that the SeparateWords() routine is ONLY called if all of the abovementioned conditions are met. Here is the source code for the C based section of the extract_words program...

See program 1 opposite

The Magic Linking Process

Before we can handle the assembly language coding it is necessary to know a little about what goes on when C function calls are executed. When I place a call to a function, say SeparateWords(), into a C source program the compiler uses the source code statement to generate a reference of the same name. In most cases the compiler tags on an initial underscore to the function name,

Program 1

```
/*
=====
*/
/* EXTRACT WORDS: Word separator which uses an assembly language patch */
/* Programmer: Paul Overaa */
/* Date: 4th Oct 90 */
/* Note: The program just provides an unsorted list of words. Use from the */
/* CLI like this... extract_words <filename> */
/*
=====
*/

#define FIB_SIZE (LONG) (sizeof(struct FileInfoBlock))

#include <exec/types.h>
#include <exec/memory.h>
#include <libraries/dos.h>

ULONG g_filesize; /* exported as _g_filesize */
ULONG g_buffer_p; /* exported as _g_buffer_p */

main(int argc, char *argv[])
{
    BOOL LoadBuffer(), error_flag=TRUE; /* guilty until proven innocent approach */
    struct FileHandle *fh, *Open();
    struct FileLock *filelock_p;
    struct FileInfoBlock *fib_p;

    if(argc=2)
    { /* user has given a filename so first check to see if it exists */
        if (filelock_p=(struct FileLock *)Lock(argv[1],ACCESS_READ))
        {
            if(fib_p=(struct FileInfoBlock *)AllocMem(FIB_SIZE,MEMF_PUBLIC))
            {
                if(Examine(filelock_p,fib_p))
                {
                    g_filesize=fib_p->fib_Size; /* now we know how big the file is */
                    if(g_buffer_p=AllocMem(g_filesize,MEMF_PUBLIC))
                    {
                        if((fh=Open(argv[1], MODE_OLDFILE))!=NULL)
                        {
                            error_flag=FALSE; /* clear... everything worked O.K. */
                            g_filesize=Read(fh,g_buffer_p,g_filesize);
                            Close(fh);
                            SeparateWords(); /* call my assembly language patch */
                        }
                        FreeMem(g_buffer_p, g_filesize);
                    } /* end of if AllocMem() for buffer */
                } /* end of if Examine() */
                FreeMem(fib_p,FIB_SIZE);
            } /* end of if (fib_p) */
            UnLock(filelock_p);
        } /* end of if (filelock) */
    } /* end of if(argc=2) */

    if (error_flag) printf("sorry - cannot get details of this file\n");
} /* end of main() */

/*
=====
*/
```

so the call to a C function SeparateWords() has the linker searching for a routine called _SeparateWords. It is this routine which we have to provide.

The exact code that the various C compilers produce when they see a reference to a function call does vary and the place to look for details is your compiler manual itself. All you need to know to start with is that the usual end result is that any parameters present in the function call are pushed onto the stack and then a call is made to the appropriate subroutine. We are not going to talk about parameter passing in this article because our call will be a simple one, ie there will not be any function call parameters.

If all the references and directives are right the rest is easy..."

With the C code out of the way, the next step then is to write the assembly language source and assemble it to produce linkable (as opposed to directly executable) object code. We have got to use a couple of assembler directives called XDEF and XREF to get things running properly. XDEF is a directive used to define labels which are visible to other modules at link time - if we leave this out the linker will not be able to resolve the _SeparateWords reference present in the C code. XREF goes the other way, i.e. it tells the assembler that the info needed about an item will be imported when the assembly language object-code module is linked.

If all the references and directives are right the rest is easy... we compile the C source, assemble the assembly code, and then use 'Blink' to link the modules to the startup-code.

Assembler Code

The Assembly language code checks for groups of characters in the ranges a-z / A-Z and regards a word as any set of these characters delimited by ANY other characters !

The assembler code may look nasty, but in actual fact it is not. The routine starts with an instruction to preserve the registers which are going being used. Additional preliminary code then collects an output handle and loads that, plus the buffer's start address and the textfile's size, into my chosen registers (see descriptions in the code itself).

To find the start of a word we use two loops which scan through the file characters to see if they lie between a-z or A-Z. As soon as a letter is detected we branch to START_FOUND. A similar pair of loops then continue scanning but now look for the opposite conditions (char-

acters which are not in the a-z or A-Z ranges) the object being to now identify the end of a word. The process continues until the whole file has been examined.

The important point is this: Each time a word-start/word-end has been detected the starting address has been recorded (in register d2) and the number

of characters present in the word have also been counted. In the current code we just use these values to export the word using an AmigaDOS Write(stdout) call (which dumps words back at the CLI window). Later we shall be making a small modification to this routine so that instead of outputting words it builds a list of pointer references showing wherea-

bouts the words are in the originally loaded copy of the textfile.

For the moment though I think we have covered quite enough for one month so here, to finish off with, is the assembly language patch. You will see my XDEF and XREF statements at the end of the first code section...

P.A.O.

opt L+				end			
NOLIST				NOTLETTER	addq.l	#1,a2	point to next
				character	subq.l	#1,d5	decrease
incdir "df0:include/"				characters left	count		
include exec/exec_lib.i				that's the word start	bne	FINDSTART	and see if
include libraries/dos_lib.i				bra	FINISH		
LIST				START_FOUND			
*					move.l	a2,d2	start of word
*					moveq.l	#1,d3	initialize char-
* Assembler patch for scanning an ASCII file and picking off words				acter count	.		
* defined as letters a-z or A-Z delimited by ANY other characters *				FINDEND	addq.l	#1,a2	point to next
				character	subq.l	#1,d5	decrease
				characters left	count		
				found so quit	beq	FINISH	end of file
					cmpi.b	#lowercase_z,(a2)	is char a-z ?
					bhi	NOTLOWERCASE2	
					cmpi.b	#lowercase_a,(a2)	
					bcs	NOTLOWERCASE2	
				bit character count	addq.l	#1,d3	increment 32
				bra	FINEND		
				NOTLOWERCASE2	cmpi.b	#uppercase_z,(a2)	is char A-Z
				?	bhi	NOTLETTER2	
					cmpi.b	#uppercase_a,(a2)	
					bcs	NOTLETTER2	
				character count	addq.l	#1,d3	increment
				bra	FINEND		
				NOTLETTER2	move.l	OutputHandle,d1	reset stand-
				ard out	CALLDOSWrite		output the
				word	move.l	OutputHandle,d1	reset stand-
				ard out	move.l	#LF,d2	start of LF
				string	moveq	#1,d3	1 char only
					CALLDOS Write		send LF char-
				acter			
					addq.l	#1,a2	move to next character
					subq.l	#1,d5	decrease
				characters left	bne	FINDSTART	look for more
				words			
				*			
				FINISH	movem.l	(sp)+,a2-a6/d2-d7	restore
					rts	back to C	
				*			
				*			
				LF	dc.b	10	just a LINEFEED
				OutputHandle	dc.l	0	
				*			
				*			
lowercase_z	equ	\$7A					
lowercase_a	equ	\$61					
uppercase_z	equ	\$5A					
uppercase_a	equ	\$41					
*							
_SeparateWords	movem.l	a2-a6/d2-d7,-(sp)	preserve				
open	CALLDOS Output		DOS already				
handle	move.l	d0,OutputHandle	Get output				
	move.l	_g_buffer_p,a2	buffer start				
file	move.l	_g_filesize,d5	characters in				
*							
FINDSTART	cmpi.b	#lowercase_z,(a2)	is char a-z				
?	bhi	NOTLOWERCASE					
	cmpi.b	#lowercase_a,(a2)					
	bcs	NOTLOWERCASE					
	bra	START_FOUND	now look for				
end							
NOTLOWERCASE	cmpi.b	#uppercase_z,(a2)	is char A-Z				
?	bhi	NOTLETTER					
	cmpi.b	#uppercase_a,(a2)					
	bcs	NOTLETTER					
	bra	START_FOUND	now look for				

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Adventure Now! Continued from page 91.

INTERPLAY GET THEIR RINGS

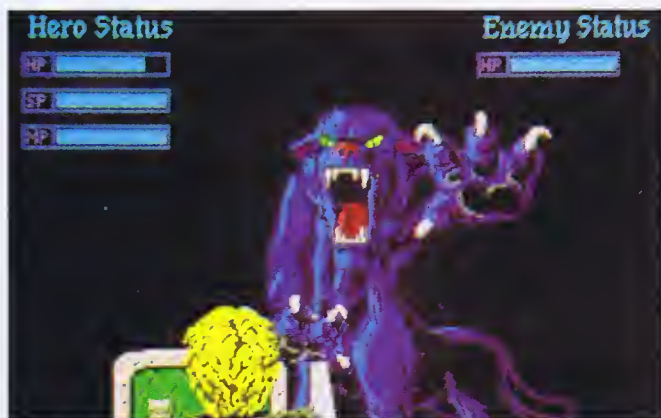
My favourite adventure software company Interplay, whose classics include the Bards Tale series, and Wasteland etc, have announced that they are producing a new version of LORD OF THE RINGS. I thought that Melbourne House owned the rights to that one, but it seems the intrepid lads from the New World are well on the case. The game will feature a 'Times of Lore' type overhead view, using a scrolling open map approach with members of your party faithfully following you wherever you go. To get round the obvious drawback of knowing what to do if you have read the book, Interplay have (gasp) introduced some new characters to join the Tolkein originals. Is nothing sacred?

ADVENTURE REVIEWS

HERO'S QUEST I SIERRA £29.99

Things actually got off to a bad start here, when Sierra found out that Milton Bradley already had a board game with the same title, so officially, this game is now known as Quest for Glory I.

All the same, it features three possible hero types, Fighter, Thief or Magician and consequently the game plays three different ways. Each character needs to interact with the story in ways that will help his own chosen profession, for instance it is no good a magician visiting the Rogues' Tavern and getting mixed up in a bar brawl, or a fighter solving a quest for a witch and getting extra spell tokens as a reward. This can become confusing for the player, and that is where this particular game comes unstuck. I do not want to spend over an hour solving a puzzle only to find that I should not have bothered, because it did not help me at all. As a graphically stunning project, full marks to Sierras team for producing some of the prettiest scenes yet, and walking around the town of Freiburg with its quaint buildings and sampled sounds you really do get the feeling of being right there.



Hero's Quest.

The plot is centred around said town, whose inhabitants are in dire need of a Hero to save them from the clutches of an evil force. What has happened to the Baron and his family, can you unravel the mystery and defeat the evil Baba Yaga?

As in any Sierra game, the attention to detail is tremendous, but sometimes that can prove to be a hindrance, because although you may be watching a wonderful scene of townspeople going about their business, the game speed slows down to a snails pace, which for me anyway is highly frustrating. You are free to explore really anywhere you want to, and fighting or killing monsters can do wonders for your bank balance, however, early on try to avoid the more unsavoury monsters and stick to the brigands, that way your experience levels and skill will rise rapidly.

Sierra have tried very hard to create a realistic D and D atmosphere, but I fear they have tried a little too hard and have produced a rather confusing game to play and win, although very entertaining just to play.

PERSONAL RATING 6

OMNICRON CONSPIRACY IMAGEWORKS £19.99

This is an intergalactic adventure not dissimilar in style to Interplay's Neuromancer in that the majority of the screens are of the horizontal scrolling variety reminiscent of the cheaper end of American graphic adventure releases. First Star Software (the authors) are not recognised as a major US player, and I am a little suprised that Mirrorsoft have got involved with it. The graphics and sound seem to be ported over direct from the original IBM version which naturally enough do not do our Amiga justice, and the mouse control leaves a lot to be desired when moving the hero from one room to another. The program cannot make its mind up as to which room you should be in until you have placed the character dead centre in each doorway.

If I sound pretty unimpressed with this game it is because it belongs with publishers who are not the quality-conscious providers which Mirrorsoft are usually.

The plot for, what it's worth, concerns you as a drug busting law enforcer, who is ordered by a very unfriendly Police Chief on Cron to find out what happened to the previous undercover agent who seemingly disappeared after going aboard a star freighter. No one at police HQ seems to want to help you, and outside death comes pretty quickly without any warning, so save often, you have been warned.

A poor American import.

PERSONAL RATING. 3

CAPTIVE MINDSCAPE £26.99

WHAAAAAT!!!! 250 years in suspended animation!!! Guilty on all counts! They cannot be serious!

Serious they are I am afraid to say, and you slowly succumb to the freezing fluids as the needle is inserted..... But what happens next, is that you wake up suddenly to find a full scale war going on outside your cell! Looking around your room it is plain that some computer shutting down has been responsible for your awakening, and that somehow you have to get out.

Sitting in the corner of the cell is a strange briefcase, that turns out to be some kind of computer device for communicating with the outside world. You open it and finding some instructions stuck into the lid, power it up and strange holograms flicker on. Escape may be possible after all.

This is where you start CAPTIVE, having just communicated with four droids via the briefcase, they become your eyes and ears and effectively your party in this ingenious role playing epic written by the famed Tony Crowther. You start by locating the home planet base of your droids (coordinates in the manual) and you send them off there in their ship, meanwhile you need to initialise and name your party members, this process gives them some initial statistics for dexterity, wisdom and vitality.

When the ship lands you are then presented with a Dungeon Master-like view of the base with all its differing monsters and shopkeepers etc. You must explore the corridors, fighting nasties and getting gold to buy extra goodies at the shops. Look in every nook and cranny, open cupboards to get some hidden rewards, and always remember to keep your droids powered up (there are some power points dotted about here and there). Once you have thoroughly seen everything on the first base (including a professor in a computer room) you have to blow it up and advance to the next base. There are ten bases in level 0 and a fairly easy space station to rescue yourself from. It gets harder after that. Much harder.

This is a game I cannot fault, apart from a little user unfriendliness on the part of the mouse control for fiddling with the droids 'bits and pieces'. It has great graphics, a great atmosphere, a real feel to it, in short it's worth every penny of its purchase price. Go out and buy it NOW.

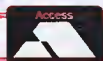
PERSONAL RATING 10

THAT'S IT FOR THIS MONTH. LOOK OUT NEXT ISSUE FOR SIERRAS CODENAME ICEMAN FOR STARTERS, AND SOME MUCH NEEDED HELP FOR THOSE DEVIUS PUZZLES.

A.M.

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LEARN TO READ

Mark Rose sees Gary – no, not the Amiga chip – miss a football match and enjoy himself

PRISMA

Aha! I thought to myself when the Editor asked me to review PRISMA'S PLAY and READ "I'll get Gary (5 year old son) to have a look at the offering on Sunday afternoon, whilst I keep one eye on the Arsenal Liverpool game on T.V. and the other eye on his progress.

So what is this child taming package called PLAY and READ ???

Well, it is a reading system conforming to the National Curriculum (PRISMA'S claim not mine) primarily directed at the beginners in the 4 to 9 year old group.

The review software comprised 3 separate PLAY and READ boxes

Level 1

Part One Prof plays a new game

Part Two Prof looks at words

Part Three Prof makes sentences

PRISMA tell me that Part Four; "Prof hunts for words" will be released shortly with Levels 2 and 3 being available during 1991.

In "Prof Plays a New Game", the box contains; 1 audio cassette, 1 Story disk, 1 games disk and five little reading books. Listening to the cassette whilst following the story disk apparently helps to put the words that will be learnt using the games disk into context; the story also demonstrates how the keyboard is used when playing the subsequent games – only the spacebar and the four directional keys (or joystick) are used.

The real fun starts with the games disk which comprises a series of games that, when correctly completed, will enable



the child to read each of the five books, progressively building up his/her vocabulary. Upon completion of the course some 63 words would have been introduced.

The vocabulary is slowly and painstakingly built up. Books 1 2 and 3 each introduce 9 words whilst Books 4 and 5 each introduce 18 words. Every Book has its own game that introduces the new words as well as repeating any words learnt in previous game/s. Each game has 5 steps and it is only AFTER the last step has been completed should the book be read.

The opening Menu allows a choice of Book and Step. This facility is highly desirable as it allows the parent to pace the learning process by allowing either a re-

turn to a previously uncompleted step or to start the next step. You do not have to complete the book before you finish a lesson.

The Games screen has a 3 x 1 grid on the left, then a ladder to the right of which is a 3 x 3 grid. A little character, Prof, is waiting at the top of the screen. He has to be guided up and down the ladder and on and off to one of the words in the left grid, making the selection by pressing the spacebar (or fire button), then guided to the same word to be found in one of the 9 boxes in the right hand grid. As each correct selection is made the word changes colour and Prof jumps up and down; after two consecutive correct screens are completed, new words will appear and so the game progresses.

As the child progresses through the books, the time taken to complete each step takes longer; Gary started at Book 3. He had to complete 5 steps, each of which had 5 substeps. Each of the substeps presented a selection of words drawn from the 18 learnt in Books 1 or 2 or now being introduced. Each group had to be correctly matched before another group of words was presented for matching. He spent nearly 3 hours playing and thoroughly enjoyed himself. What better recommendation can you have than from Gary who finds the package makes learning fun? And at £24.99 it's a bargain!

M.R.

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CHECKMATE A1500 PRIZE WINNER

Winner of the Checkmate A1500 Competition in the September/October edition of AUI is Simon J. Harper, Blackburn, who wins the A1500 expansion kit.

The correct answers were:

- 1) The Roofer
- 2) Mike Nelson
- 3) Rack-mounted version
- 4) Accelerates the A500 to 14.3MHz
- 5) Flicker fixer
- 6) ASDG INCORPORATED
- 7) Checkmate Digital Ltd., 80 Mildmay Park, London. N1 4PR.

As a consolation prize **Steven Wilkinson**, for sending us an exercise book full of hand-coloured art, wins our review copy of **The Art Department** – that's assuming SDL ever get around to sending it to us. And if we never get it (Andrew Leaning of SDL please note!) we'll send him a copy of **Videoscape 3-D** from Oxxi-Aegis who at least get us products to review.

FOCUSSING ON THE FUTURE

Joe Gene Parris looks at a longtime Amiga-leading software house in the U.S.A

Even in futuristic California, with Silicon Valley close by, predicting the next trend in computer technology isn't easy. But for John Houston, President of Oxxi, Inc., it seems the best way to predict the future is simply to make it happen to create it by producing leading edge products.

For example, *Maxiplan* was one of the earliest Amiga spreadsheets. When Houston released it in January 1987, *Maxiplan* was one of the first programs of its kind on any computer to incorporate linked worksheets, 3D business graphics, a macro language, and a graphic user interface. These features are only recently coming to market on the IBM and Macintosh in high cost products like *Excel* and *WingZ*. Not surprisingly *AUI* gave

Maxiplan its award as the best business product of the year.

Oxxi's *Nimbus*, the first small-business cash-basis accounting program for the Amiga, and *A-Talk III*, the best-selling telecommunications program, also broke new ground in Amiga software technology, and influenced a number of competitors.

Now Oxxi hopes to define part of the Amiga market once again with another generation of new and radically improved products such as *AudioMaster III*, *VideoScape 3D*, *VideoTitler 3D*, *SoundMaster* and *SpectraColor*, a new 4096-color HAM paint with Brush Animation.

For Houston, developing the kind of software we will all be using next year is as

much an art as it is a science.

"There are two approaches to software development," he says. "One way is through a series of surveys: surveying dealers and customers, and looking at other platforms for successes that can be repeated on the Amiga."

Gut Impression

The second approach is more intuitive than logical: "The problem with analysis occurs when you're really coming up with a breakthrough product," says Houston, "because people don't yet perceive a need for it."

Sometimes you just have to operate on your gut impression of what the market needs."



John Houston (centre) "You just have to operate on your gut impression."



A Industry Veteran

John Houston knows a lot about developing and marketing software because he's been at it longer than almost anyone else in the personal computer industry. He started his career at Control Data in Washington, DC, programming mainframe operating systems. There Houston worked with many people who would later go on to influence today's computer industry. (One of these was Seymour Cray, one of the founders of Control Data, and currently chairman of Cray Supercomputing.)

While at Control Data, Houston also raced cars part-time, and became successful enough to attract the sponsorship from Wrangler Jeans. In 1978, after twelve years at Control Data, he left to devote more time to racing and investments, restaurants, liquor stores and real-estate properties. But he still missed his field of preference: computers.

In 1980, Houston met up with several former colleagues from Control Data who had started a new software company called Sorcim, Inc. At Sorcim, he was responsible for the launching of SuperCalc, still one of the leading spreadsheets on the PC platform. (to be revised in March AUI.)

In 1982, George Tate invited Houston to direct the marketing and product development for a small publisher of database software called Ashton-Tate. Houston was instrumental in establishing dBase, Ashton-Tate's leading product, as the worldwide standard for database management on the IBM/PC.

When Ashton-Tate went public in 1985, Houston decided to go private, to found his own company, now known as Oxxi, Inc.

Houston's favourite example is Aldus. "People said that *Pagemaker* for the Mac served a limited niche, and that the time and effort to produce the product didn't justify bringing it to market. In fact, *Pagemaker* turned out to be the number one application during the first two years that it was out. This was a case where the developers followed their intuition."

Under Houston's guidance, Oxxi has found more than one way to bring technology to the Amiga. Not only does Oxxi develop products from scratch, the company is also takes existing products and improves them.

Oxxi made its first venture into the graphics and animation field with the acquisition of the Aegis Development Inc. product line in November 1989, with over 30 software programs for the Amiga and Macintosh. Other acquisitions included PAR Software and Glacier Technologies, two companies with a broad range of graphics and Amiga productivity titles.

Why did Oxxi acquire these companies? "Normally we look at companies not for the company myself, but for the people who develop the products," say Houston. "Aegis had several good developers who we wanted to work with, not only on the current Aegis products but on other product ideas we had in mind as well."

Whenever Oxxi takes on a product, Houston insists that it meet certain minimum standards — such as the user interface and support of popular file formats. Product managers work with programmers on these issues because sometimes the developer of a program does not view the product from a marketing standpoint.

The final step is to "Productize" a new software program. Houston defines Productizing as tailoring new features to add extra convenience to the user.

"It is all the little things that can make a program either a joy to work with or a hassle. Sometimes this can take as long as the initial development."

It's very important to keep the user in mind at all time," say Houston. "That's 'Productizing' software, and it can take a long time to get it right."

NETWORKING

Along with its role as a major publisher on the Amiga platform, Oxxi has taken on some significant in-house development projects as well. Oxxi has been working on a joint-venture with Commodore to bring the Amiga into the world of Novell *Netware*. Novell is the leading network utility in the MSDOS category with a worldwide reputation. The soon-to-be-released software will work with both Amiga and third-party network cards. "Our product not only allows the Amiga to reside as a guest on a Novell Network, many of the functions normally reserved for the file server can be performed from the Amiga

as well. It is an extremely strong product which will bring the Amiga into the heart of the corporate market," says Houston. "This is a classic example of an opportunity we simply made happen rather than waiting for events to unfold themselves."

"Since the beginning, Oxxi has always striven to produce start-of-the-art software products that are market leaders in their category. Our original focus was on business productivity software, but with the Aegis acquisition we have broadened the scope of productivity products to include the disciplines of animation, graphics and sound."

Houston recently started another new enterprise, *Outraegis Entertainment*, to develop and market a new line of creativity and entertainment products. "We have some very exciting new entertainment products in the works which we will be announcing in the near future."

What next for Houston and Oxxi? "We see that the computer will become more and more a part of the everyday home environment, as it has already done in the business world. Software will need to become more "transparent" to the user, requiring little training or instruction for the average person to use," Houston says. "Producing that kind of computer product has been our goal from the very beginning. Developing products with a concern for true ease-of-use takes longer, and requires more thought. But in terms of satisfaction of use and usefulness for the end user, it is definitely worth the effort."

"We'll continue to look for areas where our focus on technology will help to redefine the marketplace," he continues. "Networking Amigas with PCs, video and 24-bit graphics will be very important in 1991 and beyond. We have already developed considerable strength in these areas, and we expect to be actively involved in pushing back the boundaries of the technology."

Houston has been successful in the past in producing the future, so there could well be more than a seed of truth in what he is saying now. It should be interesting for Amiga users to keep an eye on Oxxi, and find out how clairvoyant Houston turns out to be

J.G.P.





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KCS Power PC Board AMIGA 500

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What the critics say



INDEPENDENT EDITORIAL REVIEWS

"Standard XT/AT software runs with no foreseeable problems and 704K at its disposal. All normal PC function keys are also emulated, so you can run through all those bewildering Word Perfect key combinations. . . So, if its a cheap PC you're after, don't buy one. Buy the KCS Power Board instead"

Amiga Format
Oct 1990

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23 Aug 1990

Bitcon Devices Ltd
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England

Dear Sir/s,

Ref: KCS Power PC Board

As someone who has used the Amiga 500 for both business and pleasure applications and who is aware of the limitations on the availability of suitable business software, I was immediately interested in the above product. It seemed like the ideal solution: no second machine to take up valuable space, retention of the superb graphic and video capabilities of the Amiga, needed for part of my business and the chance to make use of the huge range of business software available for MS-DOS machines.

Too good to be true, I thought, especially as the price is quite a lot less than even a DIY PC-XT alone!

Your advice and assistance on the telephone, prior to placing an order, was certainly of a standard that most companies have long since forgotten and the speedy dispatch of the goods was most impressive.

I fitted the board within 5 minutes and then spent a further 15 minutes reading the manual. A further 30 minutes was then spent on setting up the software to suit my particular requirements. This process was simple and trouble-free.

Hey Presto! - an IBM compatible machine sprang to life. Now for the acid test - the software.

A colleague with many years experience in the PC world had brought his disk collection along and we started the process of trying to make the board fail! No chance - we ran all sorts, amongst the programs tried was Autoroute 1.2, Word Perfect 5.1, Norton Utilities, PC Tools and Flight Simulator 4 (latest version). We also tried many PD and Shareware titles. Everything functioned perfectly, including the disk drives, video and printer ports. We then loaded Procomm, connected a modem and proceeded to download more PD software from various bulletin boards.

All in all, I can only say that I am more than satisfied with this superb product and I would recommend it to anyone who requires MS-DOS on their Amiga 500. You may use this entirely unsolicited letter for any purpose in connection with the promotion of your product.

Yours most sincerely
Nell Bristow

Greensborough
Victoria, 3088
Australia

11 Aug 1990

Bitcon Devices Ltd
88 Bewick Road
Gateshead
Tyne & Wear
NE8 1RS
England

Dear Sir/Madam

I would like to thank you for the delivery of the KCS PC Power Board. It has been installed in my computer and is working satisfactorily. It has allowed me to have the best of both worlds at a very cheap price.

I am looking forward to the upgrades in software as they are developed. I am looking forward to the hard disk software.

I was a bit apprehensive about importing goods from overseas suppliers but your prompt service is appreciated and I thank you for that. I am looking forward to hearing from you again.

Yours Faithfully
BS

31 Dale Walk
Hay Mills
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B25 8NH

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England

Dear Sir

I am writing to ask if it would be possible for you to send me a registration form for the PC board, as I seem to have misplaced mine! Otherwise, thanks very much for an absolutely fantastic product, one which has, in the space of only two weeks, proved its worth. Other programs not on the list which work are: Quattro, Fleet Street Publisher and Printmaster Plus. Once again, thanks very much.

Yours sincerely
K Whitchurch

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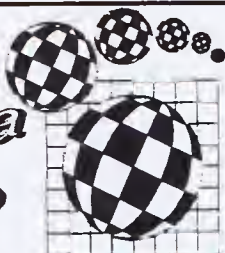
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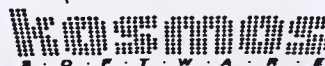
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Now The Turkey's Gone . . .

From £1.99 to £1000's, Mike Nelson advises on what to do with your post-festive cash

Christmas, of course, is over, and it's now time to have a think about a little postcelebratory spending. Depending on your budget, AUI has a few ideas about what you may like to convert the loot into as a late gift to your beloved Amiga.

We'll start with the cheap and cheerful things and for those who had a totally miserable time, some blank disks (35p a time) or a mouse mat (£3 - £4) or even a mouseholder (£1.99) to stick onto your purchase with all the gay abandon you can muster and accept our sincere condolences. Dream on for there are some really nice things to come.

If you were unfortunate enough not to get "Lemmings", then maybe you should hot foot it down to the shop and check out the Terrapins or Geordie footballers who cry a lot, this has to be one of the most endearing games yet on the old Amy. I think its appeal is reminiscent of the 64's "Jumpman", an Epyx (remember them?) platform game, in that the graphics are not the best in the universe but the gameplay is brilliant. The little cry of "Oh No!" before the Lemming explodes brings a lump like a turnip even to the most resilient of throats. Priced at about £25 this shouldn't do too much damage to the finances.

AmigaDOS is a powerful beast but looking through the manuals you get with the computer will only whet your appetite for the delights within. Whoever invented templates for DOS commands is probably sitting back smugly reflecting on a prize piece of retrograde design, rivalled only by a DHSS form, but Bruce Smith and Mark Smiddy's new book is about as comprehensive as you can get without crawling inside your Amiga. "Mastering AmigaDOS 2", Volume 1 is £21.95 (with a free disk) and number II will set you back £17.95, and very good value they are,

being right up to date with version 2.0 of the operating system.

Thirty pounds will actually buy you a surprising amount of hardware, not least an extra half meg of precious RAM, and this is well worthwhile. More fun again is a sound sampler, costing from £29, and there are several to choose from so have

a squint through the adverts to suss out the one for you.

Getting up to the £70 mark and we're into the realms of a second disk drive and this is such a luxury after juggling with Workbench and copy disks that I will say no more, except that bear in mind these were £200 a few Yuletides back. That's progress for you.

Look, you really don't want that BMX bike, so convert it into £130 and get into digitizing with Rombo's Vidi-Amiga, as they're

offering the magic box and software, with a copy of Photon Paint chucked in for good measure. We reviewed it a few months back and were well impressed with it, but for the best results, sell your brother's bike and get the RGB-splitter as well. Then, borrow your granny's CamCorder and have some real fun digitizing the pictures from the magazines under your big brother's bed. Funny place to keep AUI, but each to their own.

If you can stop drinking in the New Year, you may save enough cash to get an accelerator board really to give your Amiga more pace than an Australian bowler. Bytes and Pieces lead the field in this department and their 68030

boards for the A500 and 2000 start at about £375. How much do you drink, for Pete's sake? We hope to take a long, close look at this kit in the very near future (Oh, the trials of this job), but we anticipate a five fold increase in the processing power of the Amiga, on average.

If you're a RAM freak and can live without the speed, maybe the Inmate is for you, as this is a board for 8 megs, a co-processor socket and SCSI interface for a hard disk. Go on, treat yourself, it's only money and interest rates are bound to come down sometime before the end of the century. If Chris Wright's had a pleasant festive time, he may even sell you the RAM chips and drive to go in it, as well.

If you want PC compatibility, try the KCS board reviewed a couple of months ago by Jonathon Living, as this looks to do the job quite nicely. You'll have to commit around £300 for it but you get two computers for the price of one (and a half), and you can still play Lemmings.

Christmas is a time of extremes, and so let us spare a thought for those poverty stricken folk (the poor get poorer, and the rich get presents . . .) who simply had to make do with an A3000 from their excessively wealthy relative. Yes, for the princely figure of over two grand you

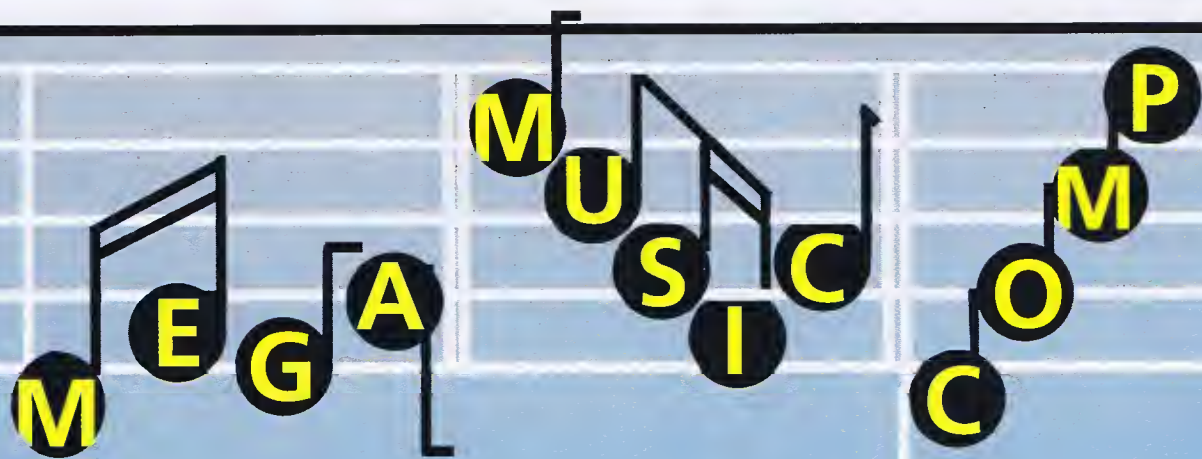
could take a giant leap into AmigaDOS 2.0 with all its frills, but the 68030 still only runs at 25 MHz!

On that high note, it seems appropriate to leave this dream world and get back into a reality scenario, but we hope we have shown that there is something for everyone on the market, from those with a bulging bank balance to the unfortunates among us whose debts rival Brazil. By the way, Happy New Year!

"If you can stop drinking in the New Year, you may save enough cash to get an accelerator board."

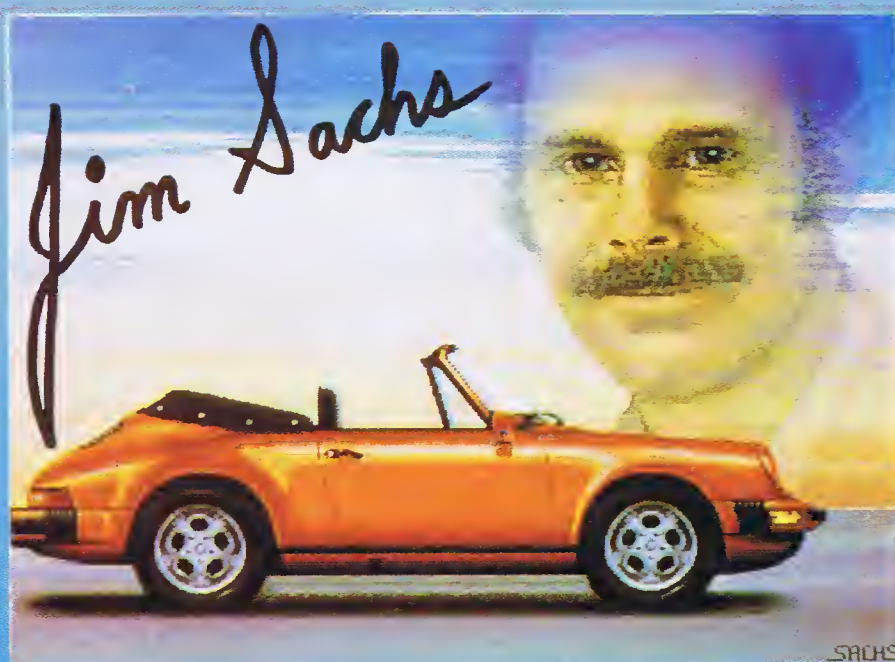
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M.N.



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No employee of participating companies or Maxwell Specialist Magazines are eligible to enter. The Editor's decision is final and entries must be returned by the 31st March 1991. Prize winners will be drawn from a hat containing correct entries. No cash alternative can be offered for prizes.

AMOS Special

AMOS is powerful games programming language - MARK SMIDDY looked at some of the games it has helped create

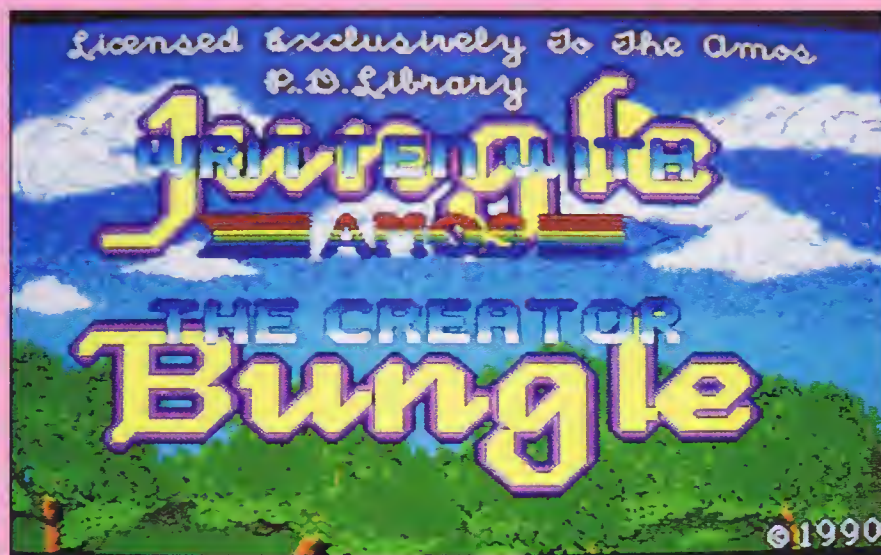
Jungle Bungle.

1Mb only, requires mouse
AMOS Licenceware, £3.50

This is a graphic adventure game that almost never was. When **AUI** spoke to author Len Tucker about it, the charming and talented Welshman commented, "I was that close to leaving it in the kid's disk box." Adventure experts Sandra Sharkey and Pat Winstanley found only one word to describe it, "Brilliant!"

The scenario goes something like this. You were flying the AMOS banner over some unnamed and unexplored jungle, located at some hot and humid latitude, when the engine shuts down. Luckily you manage to bail out and come to a safe landing. But now what? Can you get out of the jungle alive? How long will you survive without food or water? Will you be ravaged by lions or attacked by hostile monkeys? Will you be able to help the mysterious witch doctor? And just what are the natives planning for supper tonight? So the scene is set for a visual treat with over 100 exotic locations and some mind bending puzzles.

That could describe any one of dozens of pot-boiler adventures which appeared a few years ago. But this one is very different. Rather than the usual technique of having to type your every command, Jungle Bungle works on a Hypercard or Psygnosis Barbarian-like



setup. If you want to examine something for instance, you click on the "eye" icon, then click on what you want to examine.

Unlike what may be expected from a budget title, much of this is not for show - over 90% of the locations have active components which can be examined, picked up, used and so on. Spot animations like the mischievous monkey and grizzly lion feature throughout the game, which should prove irresistible fun for children from 8 to 80.

Jungle Bungle says a lot about AMOS. But it says much more about one man's genius, in creating a game that is not only visually impressive - the graphics bear

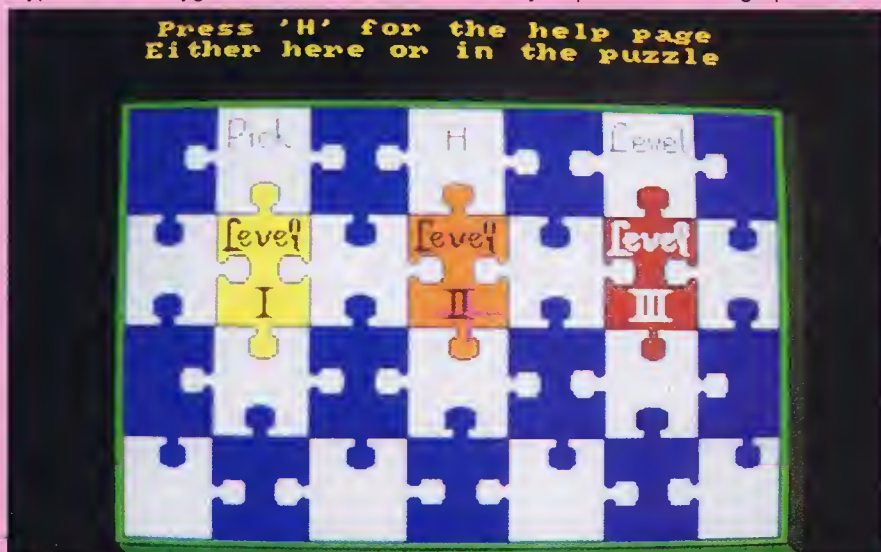
testament to that - but also challenging and enjoyable. Being Licenceware though, Len only makes a very small royalty on every copy sold by the library. If every **AUI** reader bought it (the price is hardly prohibitive) Len might be willing to develop more of the same. Nice one, we want more. Highly recommended.

Thingamajig.

All Amigas, requires mouse
AMOS PD, £2.50

This is another offering from "Sparx" alias Len Tucker of Jungle Bungle fame. Like Jungle Bungle, this is also of the highest quality, and although firmly aimed at children, has won the hearts of many an adult player. As may be suggested by the title, Thingamajig is a jigsaw puzzle. But this is a jigsaw with a difference - because it was designed to help young minds match shapes and patterns.

Each puzzle is made from dozens of pieces and each one is a different shape and size. This differs from the conventional jigsaw where each piece is a fixed size and the puzzle solved by bashing the pieces together to make a picture. In Thingamajig, the picture is already displayed as an outline - all the child has to do is pick up each piece and fit it into the appropriate place.



In case the player gets stuck, the game even features a help function which shows where the piece should go. Scoring is calculated from the time taken to complete a puzzle minus the number of times the help function was used. Recommended.

Colouring Book.

**All Amigas, requires mouse
AMOS PD, £2.50**

The name Trevor Prince may not instantly ring any bells, but I can confidently predict, his Colouring Book program will be playing on many new machines after Christmas - keeping parents happy and the kids quiet. This is one of those simple programs which no commercial software house would ever consider, yet it fills a niche in a largely untapped market.

As the name suggests, it is a computerised version of a colouring book. The child is presented with a screen where any one of 16 colours can be chosen from a palette. Clicking the mouse takes the child to a pre-drawn picture which they can colour and re-colour until their heart's content. Themes for the beautifully drawn pictures are taken from well-known nursery rhymes like we-Willie-Winkie and Humpty Dumpty. At any stage, the pictures can be saved to disk for later retrieval or printing.

Colouring Book saves all the messing around with conventional paint boxes,

helps teach mouse and colour coordination and allows the child to explore their creative potential. In tests 9 out of ten children (whose parents expressed a preference) said they preferred it to whiskers. Highly recommended.

Pick-a-Puzzle.

**All Amigas, requires mouse
AMOS PD, £2.50**

Is there no stopping Len Tucker - maybe this should be the Len Tucker column? This latest offering from the Sparx stable landed at **AUI** shortly before the final release version went out for duplication. The idea is very similar to Thingamajig but this game is meant for adults and clever dicks.

More addictive than its predecessor (if such a thing is possible), this game is based on the more conventional type of jigsaw. As with all Sparx' releases the graphics are excellent throughout. At the simplest level, the player is provided with a jigsaw grid into which the pieces of the puzzle are fitted. This may sound easy - but take it from me - this is harder than it



appears. On level two, the "jigsaw" disappears and on level three the pieces start rotating! Pick-a-Puzzle comes with eight predefined jigsaws with separate data disks already available. Jigsawphiles might be interested to learn that a construction set is in the pipeline. Recommended.

M.S.

Thanks!

This selection came courtesy of Sandra Sharkey's amazing AMOS PD and Licenceware library. Sandra is a big fan of AMOS and has the largest selection of AMOS PD and licenced games anywhere. As an added bonus the selection has recently been serviced by the indefatigable Martyn Brown - alias Spadge - improving the quality of presentation way beyond what could normally be expected.

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Amiga Answers

Andy Eskelson searches out the answers to your tough technical questions

Dear AUI,

I have been using an Amiga B2000 for 18 months having upgraded from an A500, the B2000 is configured with a non-autobooting 60 meg Seagate Hard drive, two 3.5 inch floppies and an 8up ram card with 2 megs installed.

I use the system for business purposes everyday for Spreadsheets; Wordprocessing; Accounts and CAD, however I find it an absolute pain changing programs which require different printer preferences setups.

Is it at all possible to write an IconX operated script file to alter preferences? Thus saving me time and effort rebooting from different floppies to set different printer requirements in the system configuration, every time I want a printout from a particular program.

**Marston Hart,
St Leonards-on-Sea**

Dear Marston,

The answer is yes and no. In order to do this you need to get hold of a PD program called SetPrefs. This is a nice utility that allows you to enter a command in the CLI thus: "SetPrefs setup1"

setup1 is a renamed system-configuration file that is generated by Preferences You have to go through all the setups that you want first, but once done that's all there is to it. You can call the setups any name you like i.e. BloggsPrinter or anything that takes your fancy. You can use IconX in the normal way with this command.

Dear AUI,

I have recently purchased an Okimate 20 printer and after reading your informative article in **AUI** Vol4 No6 I thought I might write to you for some professional advice.

In your article you said it was possible to adjust the printers line feed from 36/216 of an inch to 34/216 by

editing the printer driver's "1B2224" commands to read "1B3322" I have experienced a problem with this as I am running WB 1.3 and the Okimate 20 printer driver for that version does not have the above commands.

After searching through my disk collection I found an Okimate 20 printer driver for WB 1.2 which caused a Guru when I tried to print with it, before and after changing the control commands.

Would you happen to know the appropriate control commands for the printer driver version 1.3 of workbench?

I would be endlessly in your debt if you could pass this information on to me as it would greatly enhance my printouts!

I have a tip on using the printer for you - I have printed this letter on fax paper which is relatively cheap to buy and I think gives a fairly good quality of printout.

**Simon Chandler,
Cardiff**

Dear AUI,

While reading **AUI** Vol4 No6 I was very interested about your article concerning the Okimate 20 colour printer. I was so interested that I bought one.

I took note of the dodgey form feed, and I thought that I would have no problem solving it, with the advice that you gave. Unfortunately I have found out that the Okimate driver supplied with WB 1.3 has been rewritten and therefore does not contain the command "1B3324"

I have tried to get a copy of the 1.2 version of the Okimate driver, but my attempts have been far from fruitful. I even got the Okimate 20 colour printer demo from Softville PD which contained the 1.2 driver but it did not print, never mind solve the form feed problem.

Therefore I consider you as my last hope. I have enclosed a blank disk on which if you would, copy the reconstructed 1.2 version of the Okimate printer driver.

**A. Wright,
Chesterfield.**

Dear Simon and A. Wright,

The 1.3 drivers are different to the 1.2 drivers and as such they do not contain the same commands, so the line feed fix does not work, sorry there is nothing that you can do about that. There are several notes in the books about narrow lines, and the manual suggests selecting custom paper size in preferences, this can overcome some of the problems.

You could write your own driver, not so hard as it sounds; there is a PD utility called PrtDrvGen. It is a bit slow and long winded but I have used it occasionally and obtained reasonable results from it.

I WILL NOT supply copyright software sorry, it's illegal!!

Dear AUI,

After the favourable review of the Okimate 20 printer in your magazine I purchased one from Mr Diamond in Pool from my Amiga 500.

However I discovered the plug in module supplied was for a serial connection and not the parallel connection referred to in your review.

I queried this with Mr Diamond of Poole and he said all his stock was of the serial connection and this was satisfactory. However I would like to know whether there is any disadvantage and if so how could I purchase the parallel cartridge.

I would like to ask also if the purchase of additional 1/2 meg of internal memory invalidates the warranty of the Amiga 500. I am thinking of purchasing the "own brand" of 1/2 meg internal together with the external drive from Mr Diamond.

I would like to say how helpful your magazine has been in my early home computing experience, and look forward to your reply.

**Keith Chambers,
Poole**

Dear Keith,

There is no problem with the serial interface, make sure that you select the correct baud rate and select the correct flow control method. The manual describes the settings. Use preferences on the Amiga to set the speed and flow controls, and also to set the serial interface option. Select save and then reboot and all will work fine.

The only problem with the serial interface is when you also want to connect something else to the Amiga,

say a modem. All you can do then is buy a switch box and remember to switch the correct device in line when needed!

The half meg of ram will not cause any problems provided its plugs into the trap door under the Amiga.

Good luck with your new purchases, you will find the extra memory and extra drive a great help.

Dear AUI,

I must have a hundred questions I would like to ask but in answering one of these in this letter you might help me to answers for the others.

Firstly, on hardware, I have been using an old telly for a while now and I would like a monitor but money being tight I thought it might be a good idea to get a new telly with one of those Scart connectors, as I was led to believe that it is the demodulator thingy that loses the picture quality. If this is so how would one compare to a monitor?

Secondly, I can have the use of one of those printers that come with an Amstrad PCW9512 but it has some weird kind of connector on its lead. Is it usable and if so where can I get a lead from to plug it in? Or how do I make one if no one else does?

Lastly, I feel that I could have more fun and learn more quickly if I were in a user group and wonder if anyone knows of one that meets in my area.

I have been reading a few Amiga mags for a while now and this is my first letter to one, I chose to write to **AUI** because I think it is a little better than the others but even so for my taste I would prefer less of the shoot 'em-up games reviews, there are plenty of mag's doing that. I do not object to reviews of games, some are quite entertaining and original, I have a few myself, but a lot are just the same game with slightly different pictures.

**Gary Byatt,
Stoke-On-Trent**

Dear Gary,

The telly versus monitor is an interesting question, as it depends on the telly! If you are talking about a small screen telly then the quality will be reasonable. However the monitor will normally beat it hands down. Another point is that it is possible to buy a tuner unit that will convert your monitor into a telly! As always 'yer pays yer money and takes yer choice'.

The printer is out as far as I know. Amstrad control the printer with the electronics in the computer. That means that the printer does not understand how to print unless it is connected to the PCW!

User groups are another matter, keep an eye on the group lists in magazines, and try ICPUG and the AUG, both advertise in **AUI**.

Dear AUI,

I am an art student in the last year of my A levels and for part of my course work I am writing a thesis on computer art and animation. I need to know whether there are any art galleries which exhibit computer art, I need to know the main artists and what their work is based on etc. I would be grateful for any literature you could send on this subject.

**David Banner,
Rhondda,
S. Wales**

Dear David,

I do not know of any galleries that are showing computer art, but there have been one or two exhibitions. One of the best known art events in this country is the competition run by the Amiga Centre of Scotland, and there are thousands of examples of computer art in the various PD libraries, why not look at a few?

Don't forget that the artwork that is used in some of the games software is an equally valid source of material, some of it is outstanding.

Dear AUI,

I am planning to buy an Amiga for use in the production of videos. It will be used to title camera video and to produce business graphics, and animations to work on digitised images.

I want to spend as little money as possible for the initial system and would like to know what advantages the B2000 has over the A500 in real computing power. I know that it has expansion slots but I have no need of them. Would an A1500 with extra ram, which I will need anyway, be as good?

My real query however is in regard to the variety of ram types. I have seen three in advertisements, Fast, Graphic, and Chip, could you explain the differences between them and tell me how much of each can be had within the 9Mb total?

I am also in a quandary about hard drives. The 590 seems a good buy, especially when the 2Mb of ram is included and if two can be daisy-chained? Also the 590 seems to be very slow, its quoted speed is only 80ms whereas other drives quote 40ms and even 28ms. Please advise on the merits or otherwise of the 590.

**G.D. King,
Torrevieja,
Spain**

Dear G.D. King,

Firstly the A1500 is a 2000 machine but fitted with two floppy drives, or do you mean the Checkmate reboxed system?

The B2000 is the same as the A500 in terms of raw power. However I would always go for the 2000 in your case as

the expansion capabilities are very, very useful. However you have to work within your budgets. The Checkmate with extra ram is fine, but what you must remember is that some ram expansion systems do things in rather odd ways, and they might, and it is only a small risk, not work with all software.

Ram types. . . Uggh, I do wish adverts would be clear about this matter. . .

Graphic and Chip are one and the same, fast is real expansion ram. . . let me explain. . .

The Amiga has two things that want access to the memory, the special sound and graphics chipset, and the 680x0 processor.

Sometimes the processor wants access to the same memory as the chipset and this causes clashes. If we talk about the older series of Amigas, the custom chips could access 512K of memory only. This is the first block of memory with which the system is fitted. If the processor wants access at the same time as the chipset, the chipset wins and the processor is made to wait.

This memory is known as CHIP memory because the custom CHIPS can access it. It is also known as Graphics memory and Sound memory and SLOW memory (because it can slow up the processor).

In another area of the Amiga's memory map, the expansion memory is located, this memory is exclusively used by the processor; the custom chips can still access the CHIP memory, but not the expansion memory. The processor is not slowed down when using expansion memory so this memory is known as FAST ram, or Expansion ram.

There is a complication, (life is never simple!) the 512k memory module that plugs into the trapdoor of the 500 is SLOW memory. This is because it is on the same bus as the CHIP memory, and when the chipset accesses its 512k of memory this additional memory is locked out from the processor, hence this memory is known as SLOW ram.

The 590s are a very good buy as you say. You can plug other SCSI devices into them, but I doubt that daisy-chaining will work in respect of the ram. Someone might have tried but I would not even attempt it.

Access time is not too important, 80ms is LESS than one tenth of a second, and unless you are going to access hundreds of separate files then don't worry about it. If speed is very important, put the files in a big ram disk and work on them there. (That's exactly what I do when using the C compiler, there is nothing faster than the ramdisk.)

Finally just to complicate things even more there is a new chipset now out. This has increased the total addressable CHIP memory to 1Mb, this gives you more memory for graphics etc, all of this memory is of the SLOW CHIP type.

WRITE TO REPLY

This is where you get your chance to speak – or write – your mind about what's bugging you – or your computer. Bud Vennos fields the bouquets and the brickbats. New to the section is STAR LETTER award of £50 worth of Amiga Goodies to the sender of the best letter. Get writing!



Dear AUI

In the November issue of **AUI** there was an article on Commodore's Business Machines. In this article you asked a reader to write in and tell you if they saw the Amiga 1500 inc. VAT for under £1000.

In the December issue on page 50, Holobyte have advertised the Amiga 1500 priced at £949 including VAT. Do I get a prize? Even if I do not **AUI** is still a great magazine so keep up the good work. The article had a slight flaw, the Amiga 1500 does not come with a hard disk.

Martin Smyth, Edinburgh.

Dear Martin,

Well spotted! As you were the first reader to report the find, probably the bargain of the year, you will receive a prize – the STAR letter prize. It is in the post and you should be receiving it soon.

As you pointed out the Amiga 1500 does not have a hard disk drive, sometimes when one is reporting new advancements there is some confusion over actual shipping specifications. No doubt, you, and other readers, will have benefited from December **AUI**'s in-depth look at the Amiga 1500.

MORE SERIOUS ... LESS FUN

Dear AUI

When I first bought the Commodore 64 I used it for the same purposes as most others who bought it – solely for games playing. But, as time passed I lost interest in games, as they all seemed to follow the same themes, and all were too easy. I decided to start programming my own. I found a magazine which ran monthly ar-

ticles on BASIC programming – I typed them in, debugged them, but I learnt. When I had learnt BASIC I found it too slow, so I tried assembly language. Again the magazine was running a series on assembly language. I learned from that too.

Therefore, may I suggest running some programming articles every month for the Amiga in **AUI**. I would especially like to see a running series of articles, that when typed in create an arcade game, or a series of handy subroutines in BASIC/ assembler.

Secondly, I think that you have too much advertising, I stopped buying a previous magazine for this very reason.

On games reviews, I think that **AUI** has too much games, and at most times can be called a games magazine. Some people did not buy the Amiga just for its games!

Mr A. Tulip, Mansfield.

Dear Mr. Tulip

Many Amiga owners wish to program, not because they have great illusions about writing games and becoming rich, many who wish to do so, like yourself, are uninterested in games. The reason is because they like to be able to command further understanding and enjoyment from their hobby. **AUI** will be continuing its series on programming – probably more QUADS. Games programming is a little more difficult because of the large amount of DATA to be typed in, and usually errors occur, and 1Mb is needed to assemble. To do that properly a Coverdisk would need to be included, and for such a relatively short article a huge cost would have to be incurred.

Advertising is the fundamental to the financial viability of virtually any magazine in whatever industry, but don't be put off. The number of editorial pages rises proportionally to the number of advertising pages. In general for a well-beloved publication, more advertising pages means more income to spend on more editorial pages, while less advertising means fewer editorial pages. Month by month a jug-

gling act is done between the editorial and advertising pages to allow the magazine to fit into its planned size, which is calculated a few months in advance depending on estimated advertising pages. Advertising also makes people aware of what is available, and allows them to shop around via mail order. Many people like adverts. Some claim to buy magazines for nothing else – which is a good thing when you look at some magazines!

Relative to all other Amiga magazines **AUI** has a modest games section, and it is regarded as an extra feature in the magazine. If it were omitted it would not necessarily mean that more application reviews would be included. If it were increased it would definitely not take away from the current pages allocated to hardware and application coverage. Many of **AUI**'s readers are not dedicated games players, but most enjoy a game if it is appealing to them. They may only buy a few games per year, but those are often the ones most recommended and of the highest quality. They need information, even advertising, to be able to judge which they want and exclusion of our games coverage would be letting them down.

NO THANKS

Dear AUI

Reading Mervyn Rosenberg's article 'No Thanks for the Memory' about KindWords has driven me to write a few 'kind words' myself in defence of the programmers of this piece of software. Let me first point out that I am in no way connected with these people, nor am I a user of KindWords.

The article made four major complaints:

1. That KindWords uses too much memory;
2. You need to make a lot of disk swaps (13 to start a spell checker);
3. The program tells you how much memory you have as a percentage, but does not tell you what of;
4. Some memory is 'eaten' when KindWords exits.

To answer these points, does the author really expect to be able to do any serious computing on a 1 drive 1/2 Meg machine? As for disk-swapping, a quick trip into using the CLI will teach you all you want to know about swapping disks! Two swaps are needed just to get a directory of any disk other than the Workbench. With a big program one has to trade memory against disk swaps. You can either have the whole lot in memory, or you can load bits of the software (such as a spell checker) as they are needed to cut down on memory usage at the expense of disk swaps. I agree that 13 swaps seems a little excessive, but my answer is to buy a second disk drive, or preferably a hard disk.

The author's third and fourth points are

more valid. A percentage memory is pretty useless unless you know of what it is a percentage. However, it does appear to serve its purpose, since the number approaches zero as you run out of memory. On the last point, I suggest someone checks whether this is a real problem with KindWords not freeing some memory it has allocated for itself, or whether this is simply that a library that has been used by the program has not been expunged from memory. There is a PD program available to do this.

Dr. Andrew C.R. Martin, Ashtead.

Dear AUI

Mervyn Rosenberg's problems with KindWords are almost entirely due to his own shortcomings!

The handbook quite clearly states: "*KindWords works in 512k of memory. However, because of limited memory space there are some constraints. To fully utilise KindWords, it is recommended you upgrade to 1 MegaByte. If you do so, you will be able to load the dictionary into memory for greater spellchecking speed, and the faster RAM will give you better performance.*" This little excerpt was taken from page 2 of the KindWords handbook.

Sure, it is a big program. It needs to be to support its outstanding features and uniquely flexible environment. Mr. Rosenberg's comments display an ignorance of wordprocessing. Has he ever tried to use the cumbersome, slow, and ludicrously complex packages that pass for purpose built wordprocessors? Try using Locoscript, Mr. Rosenberg, or even the much-hyped WordPerfect system, which is so complex the Civil Service has to send its operators away on week-long courses to learn how to use it.

Jim Curry, Surbiton.

Dear Readers

What Mervyn Rosenberg was trying to point out was that for an advanced machine such as the Amiga software must be its equal.

The excerpt from the manual does highlight the limitations of the program, but it is not an excuse for eating up memory, and if you are a user who uses Workbench to pop in and out of applications during long work sessions then maybe 8 Megs is more appropriate to accommodate KindWords.

The article does not set out to distinguish utilities which run, or do not run on 1/2 meg machines. What it does highlight is the bad memory management of the application. Being users who take com-

puting seriously you may be familiar with using the Workbench. It is designed so that you can move in and out of applications without constantly re-booting. To allow this to happen applications must follow a few simple rules, one of which is to de-allocate any memory it may have previously allocated when exit i.e. to return to the Workbench leaving as much memory as was there previous to usage. KindWords does not do this, even if you run it on a 2 Meg machine. If a user, even with a hard disk, moves in and out of KindWords several times during a work session, they may need 8 Megs+ to allow other applications to run properly.

Disk swapping, as any Amiga User knows, is a serious Amiga fault, but there are many users still without a second drive and KindWords limitations must be highlighted. Second disk drive owners need not worry about particular comments made towards disk swapping, but single drive owners may find them useful.

The program is big, or so it would appear, but there is nothing special about KindWords which quantifies such large usage of memory other than wasteful programming, so those 13 diskswaps could probably have been reduced.

Memory percentages are only as useful as the information they give. Sadly in KindWords case one is left guessing and is unsure if a particular file is small enough to fit.

The worrying aspect of KindWords is how much free memory is available, because the application has a tendency to lock the Amiga if its space is violated. The way KindWords handles lack of memory is more cumbersome than the limitations themselves. Instead of checking for free memory it will happily carry out the given task, until it locks up causing a reboot.

Using PD software to overcome a fault of a commercial package is not the most assuring gesture a potential buyer is faced with.

I am an ex-user of KindWords and can appreciate some of the more refined features it supports. It is the best package for simple use i.e. booting up the Amiga, writing a letter, spellchecking (2 drives), printing out, and switching off, but for serious use I would have to say that it does have serious limitations centered around the missing memory problem. I think Mervyn Rosenberg has made these people aware of limitations which are due to the bad programming techniques, rather than the Amiga's hardware limitations.

P.S. The Civil Service sends its employees to training courses on how to

turn up for work on time, so your observation is not surprising. If you had used WordPerfect you would understand why it is the preferred package amongst PC users.

NOT NEW

Dear AUI

I was torn between upgrading my Amiga 500 into an A1500 expansion box with a Hard Disk or exchanging it for an Amiga 1500.

After talking in some length to a Commodore representative I was told the Amiga 1500 was a brand new machine, ideally suited for games and business use.

On arriving home and unpacking the system I found an Amiga A2000 label on the back of the machine. It would appear that all Commodore have done is re-badged an Amiga 2000, put in a second disk-drive, and called it almost the same name as an expansion unit developed by a third party to ensure confusion. Have they done this because they could not think of casing an A500 in such a professional way.

I have since returned my Amiga 1500/2000, and have purchased an A1500 Expansion system, with which I am very happy.

Lorraine Ferrer, Middlesex.

Dear Lorraine

As reported in our in-depth review of the Amiga 1500 in last issue (January 1991) that is exactly what has happened. The A2000 will probably become an upmarket model, featuring a hard disk, but isn't that what you initially wanted?

The Amiga 1500 is a low cost package version of the A2000. Rather than saying that the A2000 is now bundled with such and such, Commodore have created the Amiga 1500 deal to clash with Checkmate's A1500, but they are different machines. The Checkmate A1500 is the cheaper machine, £200 less expensive. Existing A500 owners will also find it less expensive to upgrade their own A500 into Checkmate's A1500.

However, the Amiga 1500 has its advantages for those willing to pay extra. It comes with 1 Meg of memory, it has the added benefit of an internal expansion bus, and a A500 trade-in is currently being offered. While the Checkmate A1500 is a repackaged A500, the Amiga 1500 is a repackaged A2000. You pays your money and takes your choice. . . .

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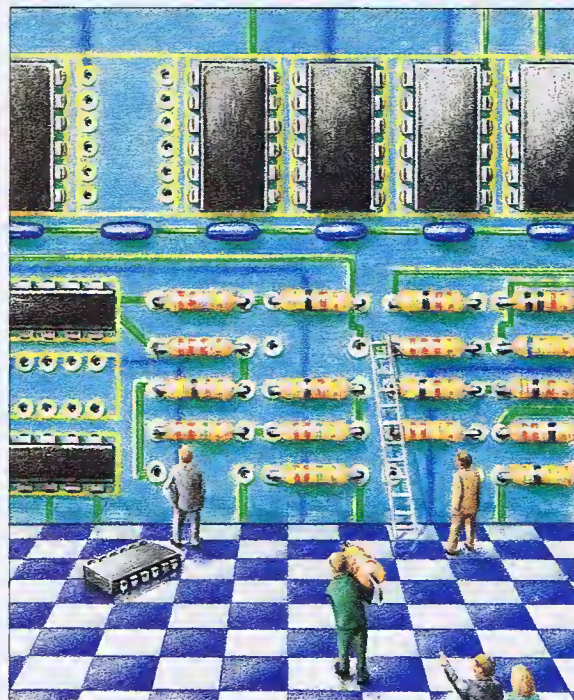
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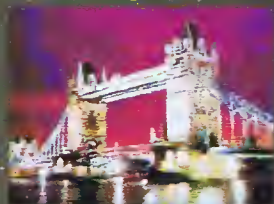
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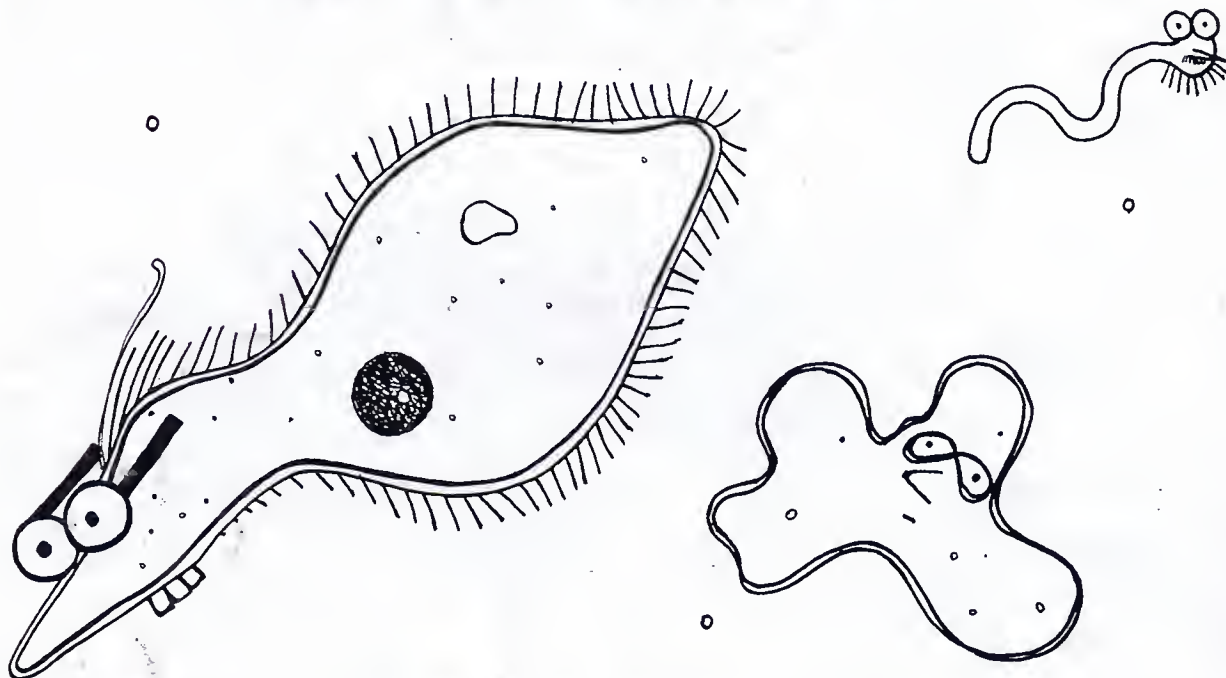
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